

THE
KITCHEN GARDENER'S INSTRUCTOR,

CONTAINING A CATALOGUE OF

GARDEN AND HERB SEED,

WITH

PRACTICAL DIRECTIONS UNDER EACH HEAD

FOR THE CULTIVATION OF

CULINARY VEGETABLES AND HERBS.

WITH A CALENDAR,

SHOWING THE WORK NECESSARY TO BE DONE IN A KITCHEN GARDEN
EVERY MONTH THROUGHOUT THE SEASON.

ALSO, DIRECTIONS FOR

FORCING OR FORWARDING VEGETABLES
OUT OF THE ORDINARY SEASON.

THE WHOLE ADAPTED TO THE CLIMATE OF THE UNITED STATES

A NEW AND IMPROVED EDITION.

By **THOMAS BRIDGEMAN,**

Gardener, Seedsman, and Florist.

NEW-YORK:

FOR SALE BY THE AUTHOR, BROADWAY, CORNER OF EIGHTEENTH ST.

George C. Thorburn, 15 John-street; Alex'r Smith, 388 Broadway, N. Y.; William Thorburn, Broadway, Albany; C. F. Crosman, Rochester; Hovey & Co.; Joseph Breck & Co., Boston; D. Landreth & Munns; H. A. Dreer, Philadelphia; Gibson & Ritchie, Newark, N. Jersey; H. Sinclair, Jr. & Co., Baltimore; J. P. Callan, Washington City; Henry Cook, Alexandria, D. C.; Frederick Wittpeun, Charleston; S. C. Turner & Hughes, Raleigh, N. C.; Mosely & Co., Mobile; Wm. Dunn, New Orleans; N. W. Hatch & Co., Vicksburg; James M. Thorburn, St. Louis; S. C. Parkhurst, Cincinnati; and other Seedsmen. Also, by Saxton & Sons, 209 Broadway; E. Walker, 114 Fulton-st., N. Y.; and Booksellers in general.

1844.

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Thomas Bridgeman

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1844

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PREFACE.

"THE YOUNG GARDENER'S ASSISTANT" having been extended to five times its original size, by the introduction of various additional subjects connected with Horticulture, I have been induced to publish that part which relates to the cultivation of Culinary Vegetables, Pot Herbs, &c., in a separate form, under the title of "The Kitchen Gardener's Instructor." This has been done with a view to enable our respectable seedsmen to afford instruction, at a trifling expense, to those of their customers whose attention may be directed wholly to that branch of Horticulture, and thereby prevent themselves being blamed by those who may not have given their seed a fair trial, from not knowing how to dispose of it in the ground.

Having had twenty-four years' experience as a gardener and seedsman, in the vicinity of New-York. I am aware of the importance of correct information on the subject of gardening; and, from a conviction that the reputation of many honest seedsmen is often unjustly attacked in consequence of the failure of seed, when the fault lies not with them, but with the gardener, I have endeavoured, in my humble way, to render myself useful both to the seedsman and gardener, by giving brief directions for the management of a Kitchen Garden, in such a way as is calculated to insure success.

But, as much depends on minute attention to points apparently trifling, I would remind my readers that the products of the garden are natives of various soils and climates, and that while some vegetables can only be raised in cool and temperate weather, others require the heat of the summer to bring them to perfection. This consideration should induce gardeners to watch the seasons as they pass, and also

to plant their seed at suitable depths and distances, according to their nature and dimensions, as an opportunity of raising some of the luxuries of the garden being lost for the season, may occasion more anxiety and trouble, than it would cost to acquire a correct knowledge of the art of Gardening.

It is, however, of the utmost importance to a gardener that he obtain such seed as will grow freely, and produce vegetables calculated to suit the market. As I value my reputation above all things upon earth, charity forbids me to believe that any man of standing would wilfully sell bad seed. It is true, that the most careful may at times be deceived, especially in seasons when a full supply of fresh seed cannot be obtained from their regular growers; but, in general, our established seedsman may be supposed to know the true character of his stock; and if he studies his interest, he will not knowingly sell an article that is not calculated to do him credit. It must, however, be admitted, that knowledge is as necessary to a seedsman as to a gardener, and therefore the above remarks cannot apply to every storekeeper who may sell seed, because many, being mere agents, do not pretend to know one kind of seed from another; and from its not being a primary object with them, it cannot be expected that they will take the same interest in the traffic as a regular seedsman, and therefore such agents may not consider their reputation at stake.

The experience of old and skillful gardeners will bear witness to the fact, that failures often occur even with good seed, and with the very best attention on the part of the gardener. It often happens that insects so infest the land, as to devour the seed while sprouting, and before a plant is seen above ground. Sometimes a serious drought succeeding a heavy rain will cause seed to perish through incrustation of the soil; and very frequently seed will fail to vegetate in dry soils and seasons, for want of pressure. I was once called upon by a neighbour to examine his garden, in which

he had sown several sorts of seed a month previous, which he had condemned as barren and unfruitful. On looking over his land, I perceived a horse track : the animal had broken his halter, and traversed the garden in different directions. On tracing the horse's footsteps, I perceived plants coming up thick in the tracks, which convinced me that if the seed had been planted deeper, or the ground rolled at the time of depositing the seed therein, the gardener would have had no cause to complain either of the seedsman or his seed.

The above instance of loss, occasioned by want of attention to points apparently of trifling importance, not being a solitary one, I would urge the gardener to precision and diligence in his undertaking; and, as my object has been to impart useful knowledge in the following pages, they who are in pursuit of information on the subject of gardening, are invited to a perusal before they deposit their seed in the ground.

As in all the former editions of this work, it was my earnest care to confine my attention to the most important practical subjects, I may be allowed here to remind the reader, that every article in the book contains ample directions for the cultivation of whatever it has reference to; but, as the inexperienced are apt to imbibe very erroneous ideas on some points of culture, I have, in this edition, introduced various notes, many of which are designed to point out the evil which it is intended to remedy;—for instance, a novice in gardening undertakes to cultivate a piece of ground, and having been informed that manure is a very important article in the cultivation of his vegetables, procures, perhaps, ten times as much as is necessary; this he applies to his beds in such extravagant quantities as to prevent the seed from germinating, and in some cases it renders the ground sterile, until time and exposure to the atmosphere reclaim it. (See note page 15.)

Another very prevalent error is evinced by persons de-

laying to sow their seed until a period when they ought to be preparing to gather a crop; hence it frequently happens that such, on the appearance of any rare vegetable in market, are induced to visit the store for some seed, which, although they sow it out of the ordinary season, they expect to gather perfect specimens of vegetables. (See notes pages 52 and 72.) Others, again, are so inattentive to their seed beds, after depositing seed therein, that they neglect all precautions of preserving their crops from the attacks of insects, which often make clean work before they are discovered. (See notes in pages 19, 55 and 104.) As such customers are generally loudest in their exclamations against seedsmen, I have been induced to discuss the most important points connected with the subjects, with a view to strike at the root of the most fatal errors attending the cultivation of a garden, and I flatter myself that my labours will be duly appreciated.

As it is not intended in this Preface to give directions, but merely to show the object of the work, I would here inform the reader, that the general remarks for the management of the Kitchen Garden, pages 13 to 30, explain the method of destroying insects; of drilling, rolling, planting, and managing the various soils; together with some useful tables calculated to make the attentive reader thoroughly acquainted with the art of gardening.

T. BRIDGEMAN.

New-York, January, 1844.

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GENERAL REMARKS

ON THE

MANAGEMENT OF A KITCHEN GARDEN.

BEFORE commencing the Catalogue, it may be necessary to direct the reader's attention to some important matters, essential to the good management of a Kitchen Garden.

The mode of laying out the ground is a matter of taste, and may be left to the gardener himself, the form being a thing of trifling importance in the production of useful vegetables; and it matters not whether the ground be laid out in beds of four or ten feet wide, provided it be well worked, and the garden kept neat and free from weeds.

Those who have not a garden already formed, should, however, fix on a level spot where the soil is deep; but as we have not always a choice, I would recommend the reader to that which is within his reach, and ought to be the object of every man, namely, to make the most of what he has.

To this end, he may form a border round the whole garden, from five to ten feet wide, according to the size of the piece of land; next to this border, a walk may be made from three to six feet wide; the centre part of the garden may be divided into squares, on the sides of which a border may be laid out three or four feet wide, in which the various kinds of herbs may be raised, and also Gooseberries, Currants, Raspberries, Strawberries, &c. The centre beds may be planted with all the various kinds of vegetables. The outside borders, facing the east, south, and west, will be useful for raising the earliest fruits and vegetables; and the north border, being shady and cool, will serve for raising and pricking

out such young plants, herbs, and cuttings, as require to be screened from the intense heat of the sun.

It may be necessary to state farther, that though shady situations are useful for the purpose of raising Celery, Cabbage, and other small plants, slips, &c., in the summer season, all standard trees should be excluded from a Kitchen Garden for the following reasons: First, their roots spread so widely, and imbibe so much moisture from the ground, that little is left for the nourishment of any plant within the range of their influence; secondly, when in full leaf, they shade a large space, and obstruct the free circulation of the air, so essential to the well-being of all plants; and, thirdly, the droppings from trees are particularly injurious to whatever vegetation they fall upon.

Previous to entering on the work of a garden, the gardener should lay down rules for his future government. In order to this, he should provide himself with a blank book, in which he should first lay out a plan of his garden, allotting a place for all the different kinds of vegetables he intends to cultivate. As he proceeds in the business of planting his grounds, if he should keep an account of every thing he does relative to his garden, he would soon obtain some knowledge of the art. This the writer has done for more than twenty years, and he flatters himself that a publication of the results of his practice will be interesting and useful to his readers.

If gardeners would accustom themselves to record the dates and particulars of their transactions relative to tillage, planting, &c., they would always know when to expect their seed to come up, and how to regulate their crops for succession; and, when it is considered that plants of the *Brassica*, or Cabbage tribe, are apt to get infected at the roots, if too frequently planted in the same ground, and that a rotation of crops in general is beneficial, it will appear evident that a complete register of every thing relative to culture is essential to the well-being of a garden.

One important point to be attended to, is to have a supply

of good old manure, and other composts, ready to incorporate with the earth; and also a portion of ashes, soot, tobacco dust, and lime, for the purpose of sowing over seed beds in dry weather, to destroy insects, which sometimes cut off young plants as fast as they come up.

If the ground cannot be all manured every year, as it should be, it is of primary importance that those vegetables be provided for which most need manure. A perusal of the Catalogue will enable the young gardener to judge of the kinds of garden products which require it most. Lest I should not have been explicit enough in this particular, I would inform him that good rich manure is indispensably necessary for the production of Broccoli, Cauliflower, Cabbage, Lettuce, Spinage, Onions, Radishes, and Salads in general.

In the event of a scanty supply of manure, those kinds of vegetables which are raised in hills or drills, may be provided for by disposing of the manure immediately under the seed or plants.*

The next important matter is to have the ground in suitable condition to receive the seed. I wish it to be understood

* As some cultivators, by their method of using manure, show that they have very erroneous ideas as to its real object or utility, I would remind such, that manure should be applied with a view to renovate and strengthen the natural soil, and not as a receptacle for seed. In order that manure may have a salutary effect, it should be thoroughly incorporated with the earth, by the operation of digging or ploughing. When it is used in hills or on a given spot, it should be well pulverized and mixed with the earth so as to form a compost. These remarks apply especially to strong animal manures, the excrements of fowls, as also to soaper's, tanner's, and glue manufacturer's manure, rags, &c. Lime, ashes, bone dust, poudrette, urate, salt, sulphur, gypsum, nitrate of potash, and other portable manures, may be sown over the land previous to harrowing or raking it, or such manures may be formed into a compost when used in hills or drills. They should in every case be used with caution, as an indiscreet use of them will destroy the seed or plants, and thus defeat the cultivator's object. Many gardeners can corroborate these facts, from having used strong compost as a mould for their hot-beds, thereby poisoning the germs of the seed, and causing the plants to die off prematurely; and it is notorious that a great proportion of failing crops is occasioned by an injudicious mode of using manure.

that I am an advocate for early sowing and planting, even at the risk of losing a little seed, provided the ground be fit to receive it. A light, sandy soil will be benefited if worked when moist, as such treatment will have a tendency to make it more compact; on the contrary, if a clayey soil be worked when too wet, it kneads like dough, and never fails to bind when drought follows; and this not only prevents the seed from rising, but injures the plants materially in their subsequent growth, by its becoming impervious to moderate rains, dews, air, and the influence of the sun, all of which are necessary to the promotion of vegetation.

Some gardeners, as well as some writers, recommend certain fixed days for sowing and planting particular kinds of seed; I think it necessary to guard my readers against being misled. The failure of crops may be often attributed to the observance of certain days for sowing. If some kinds of seed be sown when the ground is wet and cold, they will become chilled in the ground, and seldom vegetate. If they be sown in very dry weather, the germinative parts of the seed may become injured by the burning rays of the sun, or the young plants may get devoured by insects as fast as they come up. To obviate these difficulties, I have generally allowed a week or ten days for sowing the seed, intending the medium as the proper time for the vicinity of New-York. With this clearly borne in mind, the reader who observes the difference in the degrees of heat and cold in the different parts of the country, will know how to apply these instructions accordingly.

Much depends on the manures used on particular kinds of soil. The great art of improving sandy and clayey soils, consists in giving the former such dressings of clay, cow dung, and other kinds of manure, as will have a tendency to bind and make them more compact, and consequently, more retentive of moisture; and to the latter, coats of horse dung, ashes, sand, and such other composts as may tend to separate the particles and open the pores of the clay, so as to cause it to approach as nearly as possible to a loam.

The nearer the ground approaches to a sandy soil, the less retentive will it be of moisture; the more to a clayey, the longer will it retain it; and the finer the particles of which the clay is composed, the more tenacious will it be of water, and, consequently, the longer in drying, and the harder when dry; but earth of a consistence that will hold water the longest, *without becoming hard when dry*, is, of all others, the best adapted for raising the generality of plants in the greatest perfection. This last described soil is called loam, and is a medium earth, between the extremes of clay and sand.

I have, in most cases, recommended drills to be made at certain depths for the different kinds of seed; and when I have stated that the drills should be two inches deep, it is intended that the seed should be covered only one inch, which it will be when planted in these drills, and covered; and so in proportion for any other depth required. This may serve as a guide to the young gardener, but circumstances alter cases; if, for instance, some particular crops should fail, this would render it necessary, if the season be far advanced, to risk a farther planting of seed, even if the weather be hot and the ground dry. If this be planted a little deeper, it may escape the violent heat of the sun, and in the event of a shower, the ground would become sufficiently moist to bring it up; whereas it sometimes happens that seed sown after a shower does not vegetate until after the season is too far advanced to bring the crop to perfection.

The work of drilling by those who have no machine, may be performed in various ways; in some cases a plough is used, in others a small hoe, or a dibble drawn along the edge of a board or line; it is of little consequence which way the work is done, if it be well done. While I leave the gardener to make his own choice of tools, I would suggest that he be provided with two or three drilling machines; these, every handy man can make for himself; they should be in the form of a garden rake, with a stout, heavy back, and five teeth, about two inches broad, and tapered so as to enter the

ground, and leave drills two inches deep. If one be made with the teeth eight inches apart, another twelve, and another fourteen, they will be useful in making drills for the various kinds of seed; and drills thus made serve instead of straining a line when transplanting Cabbage, Lettuce, Leek plants, &c.; the line being stretched at one edge of the bed, and the drilling machine drawn straight by the line, makes five drills at once. If they are straight, they may be kept so, by keeping one drill open for the outside tooth to work in, until the ground be all drilled.

Gardeners practice different methods of covering up seed; some do it with a hoe, others with a rake or harrow; some draw a portion of the earth to the side of the bed, and after sowing the seed, return it regularly over the bed; in some particular cases a sieve is used, in others a roller. Rolling or treading in seed is necessary in dry seasons, but it should never be done when the ground is wet.

There is nothing that protects young crops of Turnips, Cabbage, and other small plants, from the depredations of the fly, so well as rolling; for when the surface is rendered completely smooth, these insects are deprived of the harbour they would otherwise have under the clods and small lumps of earth. This method will be found more effectual than soaking the seed in any preparation, or dusting the plants with any composition whatever; but as the roller must only be used previous to or at the time of sowing the seed, and not even then if the ground be wet, it is necessary that the gardener should have a hogshead always at hand in dry weather, containing infusions made of waste tobacco, lime, soot, cowdung, elder, burdock leaves, &c. A portion of these ingredients, or any other preparation that is pernicious or poisonous to insects, without injuring the plants, thrown into a hogshead kept filled up with water, if used moderately over beds of young plants in dry weather, would, in almost every case, insure a successful crop.

Saltpetre is pernicious to many species of insects; it is

also an excellent manure, and may be used to great advantage when dissolved in the proportion of one pound to four gallons of water. This liquid, applied to plants through the rose of a watering-pot, will preserve health and vigour. Soapsuds are equally beneficial, if used occasionally in the same manner—say once a week. These remedies, applied alternately, have been known to preserve Melon and Cucumber vines from the ravages of the yellow fly, bugs, blight, &c., and to keep the plants in a thriving condition.

As liquid, however, cannot be conveniently used on a large piece of land, it may be necessary, if insects are numerous, to sow tobacco dust, mixed with road dust, soot, ashes, lime, or the dust of charcoal, in the proportion of half a bushel per acre, every morning, until the plants are free or secure from their attacks. Turnip seed will sometimes sprout in forty-eight hours. Cabbage seed ought to come up within a week after it is sown; but it sometimes happens that the whole is destroyed before a plant is seen above ground; the seedsman, in this case, is often blamed, but without cause.*

A correspondent has communicated the result of an experiment he has tried for preventing the attacks of flies or fleas on Turnips. He says, “Steep your seed in a pint of warm water for two hours, in which is infused one ounce of saltpetre; then dry the seed, and add currier’s oil sufficient to wet the whole; after which mix it with plaster of Paris, so as to separate and render it fit for sowing.” Fish oil is

* As the truth of the old adage, That one ounce of prevention is of more value than a pound of cure, is very generally admitted, I would recommend the following method of preparing a bed for the purpose of raising Cabbage, Cauliflower, Broccoli, and such other plants as are subject to the attacks of insects: After digging or ploughing the ground in the usual way, collect any combustibles that are attainable, as dried weeds, sedge, turf, brushwood, leaves, stubble, corn-stalks, sawdust, or even litter from the dung-heap, which should be placed in heaps on the seed-beds and burned to ashes; then rake the ground over and sow the seed, which will not be attacked by insects while the effects of the fire remain. In the event of extremely dry weather, water the beds every evening until the plants are in full leaf. This is an infallible remedy.

known to be destructive to ants and various other small insects, but it is difficult to apply to plants.

In the summer season, Broccoli, Cabbage, Cauliflower, &c., are particularly subject to the ravages of grubs and caterpillars; to prevent this wholly, is perhaps impossible, but it is not difficult to check these troublesome visitors; this may be done by searching for them on their first appearance, and destroying them. Early in the morning, grubs may be collected from the earth, within two or three inches of such plants as they may have attacked the night previous.

The approach of caterpillars is discoverable on the leaves of Cabbages, many of which are reduced to a thin white skin by the minute insects which emerge from the eggs placed on them; these leaves being gathered and thrown into the fire, a whole host of enemies may be destroyed at once; whereas, if they are suffered to remain, they will increase so rapidly, that in a few days the plantation, however extensive, may become infested; and, when once these arrive at the butterfly or moth stage of existence, they become capable of perpetuating their destructive race to an almost unlimited extent. The same remarks apply to all other insects in a torpid state.

Worms, maggots, snails, or slugs, may be driven away by sowing salt or lime in the spring, in the proportion of two to three bushels per acre, or by watering the soil occasionally with salt and water, using about two pounds of salt to four gallons of water; or the slug kind may be easily entrapped on small beds of plants, by strewing slices of turnip on them late in the evening; the slug or snail will readily crowd on them, and may be gathered up early in the morning (before sunrise) and destroyed.

Moles may be annoyed and driven away, by obstructing the passage in their burrows with sticks smeared with tar. First insert a clean stick from the surface through the burrows; then dip others in tar, and pass them through into the floor of the burrows, being careful not to rub off the tar in the operation. Tar is also an effectual remedy against smut

in wheat: after being heated in a kettle until it becomes thin, it may be stirred in among the grain until it becomes saturated. The wheat should afterward be mixed with a sufficient quantity of wood ashes to dry and render it fit for sowing.

To prevent depredations from crows, steep corn in strong saltpetre brine, sow it over the land, or steep your seed corn; and if the crows once get a taste, they will forsake the field.

Perhaps the next important point to be attended to is the most proper rotation of crops. Virgil, who was a philosopher as well as a poet, very justly observes, that "THE TRUE REPOSE OF THE EARTH IS A CHANGE OF ITS PRODUCTIONS."

It is a curious fact, that a plant may be killed by the poison which it has itself secreted, as a viper may be destroyed by its own venom. Hence it has been very generally noticed, that the soil in which some particular vegetables have grown, and into which they have discharged the excretions of their roots, is rendered noxious to the prosperity of plants of the same or allied species, though it be well adapted to the growth and support of other distinct species of vegetables.

It is proved by experience, that fall Spinach is an excellent preparative for Beets, Carrots, Radishes, Salsify, and all other tap; as well as tuberous rooted vegetables.

Celery or Potatoes constitute a suitable preparative for Cabbage, Cauliflower, and all other plants of the *Brassica* tribe; as also Artichokes, Asparagus, Lettuce, and Onions, provided such ground be well situated, which is a circumstance always to be duly considered in laying out a garden.

Lands that have long lain in pasture are, for the first three or four years after being tilled, superior for Cabbage, Turnips, Potatoes, &c., and afterward for culinary vegetables in general.

The following rules are subjoined for farther government:

Fibrous rooted plants may be alternated with tap or tuberous rooted, and *vice versa*.

Plants which produce luxuriant tops, so as to shade the land, to be succeeded by such as yield small tops, or narrow leaves.

Plants which during their growth require the operation of stirring the earth, to precede such as do not admit of such culture.

Ground which has been occupied by Artichokes, Asparagus, Rhubarb, Sea Kale, or such other crops as remain long on a given spot, should be subjected to a regular rotation of crops, for at least as long a period as it remained under such permanent crops. Hence, in all gardens judiciously managed, the Strawberry bed is changed every three or four years, till it has gone the circuit of all the compartments; and Asparagus beds, &c., should be renewed on the same principle, as often as they fail to produce luxuriantly. In deed, no two crops should be allowed to ripen their seed in succession in the same soil, if it can be avoided; because, if it be not exhausted by such crops, weeds will accumulate more than on beds frequently cultivated.

Manure should be applied to the most profitable and exhausting crops; and the succession of crops should be so arranged, that the ground may be occupied by plants either valuable in themselves, or which may contribute to the increased value of those which are to follow; and the value of the labour required to mature vegetables, and prepare them for market, should be always taken into consideration.

Many kinds of seed, such as Asparagus, Capsicum, Celery, Feticus, Leek, Lettuce, Onion, Parsnip, Parsley, Rhubarb, Salsify, Spinach, &c., will not vegetate freely in dry weather, unless the ground be watered or rolled; where there is no roller on the premises, the following contrivance may answer for small beds as a substitute: after the seed is sown, and the ground well raked, take a board the whole length of the bed, lay it flat on the ground, begin at one edge of the bed, and walk the whole length of it; this will press the soil on the seed, then shift the board till you have gone over the whole bed.

In the absence of boards, tread in the seed with your feet, or strike on the bed with the back of your spade or shovel; but this should not be done when the ground is wet.

If it be necessary at any time to sow seed in extremely dry weather, it is recommended to soak the seed in water, and dry it with sulphur. This practice, with attentive watering, will cause the seed to vegetate speedily.

If it should be requisite to transplant any thing when the ground is dry, the transplanting should always be done as soon as the earth is turned over, and the roots of the plants, before they are set out, should be steeped in mud made of rich compost.

I have, in most cases, recommended seed to be sown in drills drawn from eight to twelve inches apart, in preference to sowing broadcast, because the weeds can be more easily destroyed by means of a small hoe, which, if properly used, greatly promotes the growth of young plants.

The following table may be useful to the gardener, in showing the number of plants or trees that may be raised on an acre of ground, when planted at any of the under-mentioned distances :

Distance apart.	No. of Plants.	Distance apart.	No. of Plants.
1 foot	43,560	9 feet	537
1½ feet	19,360	12 feet	362
2 feet	10,890	15 feet	193
2½ feet	6,969	18 feet	134
3 feet	4,840	21 feet	98
4 feet	2,722	24 feet	75
5 feet	1,742	27 feet	59
6 feet	1,210	30 feet	48

The preceding table may serve as a guide to such as are not expert in arithmetic, in laying out a garden, as it shows at one view many proportions of an acre of land, in squares

of different dimensions. The last line, for instance, shows that, if forty-eight trees be planted on an acre, each thirty feet apart, there may be forty-eight beds of thirty feet square, or thirty beds of forty-eight feet square, formed from the same quantity of land. An allowance of about one-eighth must, however, be made from the above calculation for walks and paths.

The table may also serve to show the gardener how to dispose of any given quantity of manure, that may be allotted for an acre of ground. If, for instance, it requires three hundred and two trees to plant an acre when placed twelve feet from each other, it will require as many heaps of manure to cover the same quantity of ground, if dropped the same distance apart. It therefore follows, that if one hundred loads be allowed to the acre, each load must be divided into three heaps. If seventy-five loads only be allowed, every load must be divided into four heaps, and so on in proportion to the quantity allowed. But if the gardener should choose to drop his heaps five paces or fifteen feet apart, he may make such distribution of his loads as to have one hundred and ninety-three heaps on the acre of land; in which case, by dividing each load into four heaps, he will require only forty-eight loads to cover the acre, and he may decrease the quantity still more, by allowing greater distances from heap to heap, or by dividing his loads into smaller proportions, so as to accommodate himself to whatever quantity of manure he may allot to any given quantity of ground.

As it may not be generally known that some kinds of seed are apt to lose their vegetative qualities much sooner than others, the following hints are subjoined as some rule for the gardener's government, provided the seed is carefully preserved, and not exposed to excess of heat, air, or dampness:

Parsnip, Rhubarb, and other light, scale-like seeds, cannot be safely trusted after they are a year old.

Beans and Peas of different species, Capsicum, Carrot, Cress, Leek, Nasturtium, Okra, Onion, Salsify, Scorzonera, and small Herb seed in general, may be kept two years.

Artichoke, Asparagus, Egg-plant, Endive, Feticus, Lettuce, Mustard, Parsley, Skirret, and Spinach seed, may with care be preserved three years.

Broccoli, Cauliflower, Cabbage, Celery, Kale, Radish, and Turnip seed, will keep four years, if properly attended to.

Beet, Cucumber, Gourd, Melon, Pumpkin, and Squash, also, Burnet, Chervil, and Sorrel seed, have been known to grow freely when five and even seven years old; but it is not prudent to venture seed in the garden, of the soundness of which we are not certain.

In order to put such on their guard as may attempt to raise seed either for their own use or for the market, I would observe that great care is necessary, as it is an indubitable fact, that if seed of similar species be raised near each other, degeneracy will be the consequence; it is, therefore, difficult for any one man to raise all sorts of seed, good and true to their kind, in any one garden.

If roots of any kind become defective, they are unfit for seed, as the annexed fact will show. I once planted for seed some beautiful orange-coloured roots of Carrots, but as they had been previously grown with some of a lemon-colour, they produced seed of a mixed and spurious breed; and as this is not a solitary instance of degeneracy from the like cause, I have come to the conclusion, that as in the animal frame, so it is in the vegetable system—disorders very frequently lay dormant from one generation to another, and at length break out with all their vigour; I would therefore advise seed growers not to attempt to “bring a clean thing out of an unclean,” but if they find a mixture of varieties among their seed roots, to reject the whole, or they will infallibly have spurious seed.

TABLE AND EXPLICATION.

* * In order to aid the novice in gardening, the following brief classification of such species and varieties as comprise our catalogue of vegetable seed is submitted, and it is presumed that the connecting links, and explication of this table, will not be altogether uninteresting to the experienced gardener and seedsman.

CATALOGUE.	Hardy.	Half-Hardy.	Tender.	Quick in Germinating.	Medium in Germinating.	Tardy in Germinating.	Capable of being transplanted.	Most essential Nutriment.	
								Heat.	Moisture.
Artichoke.....		0.			0.		0.		0.
Asparagus.....	0.				0.		0.		0.
Beans (English Dwarfs).....	0.				0.		0.		0.
Beans (Kidney do).....			0.	0.				0.	
Beans (pole).....			0.	0.				0.	
Beet.....		0.			0.				0.
Borecole, or Kale, &c.....		0.		0.			0.		0.
Broccoli.....		0.		0.			0.		0.
Cauliflower.....		0.		0.			0.		0.
Cabbage.....		0.		0.			0.		0.
Carrot.....		0.			0.				0.
Celery.....		0.				0.	0.		0.
Corn Salad.....	0.					0.			0.
Cress.....		0.		0.					0.
Cucumber.....			0.		0.			0.	
Egg Plant.....			0.		0.		0.	0.	
Endive.....		0.		0.					0.
Indian Corn.....			0.	0.				0.	
Leek.....	0.					0.	0.		0.
Lettuce.....		0.		0.			0.		0.
Melon (musk).....			0.		0.			0.	
Melon (water).....			0.		0.			0.	
Okra.....			0.		0.			0.	
Onion.....	0.				0.				0.
Parsley.....	0.					0.			0.
Parsnip.....	0.				0.				0.
Peppers.....			0.		0.		0.	0.	
Peas.....	0.				0.				0.
Pumpkin.....			0.		0.			0.	
Radish.....		0.		0.					0.
Salsify.....	0.			0.					0.
Spinach.....	0.					0.			0.
Squash.....			0.		0.			0.	
Tomatoc.....			0.		0.		0.	0.	
Turnip.....		0.		0.					0.
Herbs in general.....			0.			0.	0.		0.

In explication of the table, it may be necessary first to premise, that in the classification, as regards the germinating powers of different kinds of seed, it is conceded that if some of those denominated medium were put upon an equal footing with some of the class denominated quick-growing, they would vegetate in about the same time. For instance, Peas

would sprout as quick as Kidney Beans, with the same temperature; but Peas, being hardy, are generally planted a month earlier in the season. If Beans were planted at the same time, they would rot for want of genial heat necessary to their germination.

Many of the species denominated medium and tardy, require considerable moisture to produce vegetation; when not attainable, tardiness of growth, and sometimes total failure, are the consequence; judicious gardeners, however, generally obviate difficulties of this nature, by sowing such seed at the most favourable seasons. Those who delay sowing Carrot, Celery, Leek, Parsley, Onion, Parsnip, Spinach, &c., until dry summer weather, render themselves liable to disappointment and loss thereby.*

As some gardeners are apt to attribute all failures of seed to its defectiveness, I shall, in the hope of convincing such of their error, offer a few observations under each head of the table.

The first and second classes, denominated hardy and half-hardy, are subject to risk in unpropitious seasons, from unfitness of the soil to promote vegetation, rendered so by cold rains and variable weather. If sprouted seed survive a severe chill, it is the more susceptible of frost, to which it is

* As the matter relative to the first seven columns was in type previous to the introduction of the last two columns, I would here offer a few observations illustrative of their object. People in general, from not considering that the products of our gardens, being natives of the various climates of the earth, have each its peculiar aliment, expect to raise whatever they may wish for at almost any season. By referring to the classification in the eighth and ninth columns, they will be at once convinced of their error, as it will appear evident that such vegetables as require heat will grow best in summer, while those whose most essential nutriment is moisture, must be raised either in spring or autumn. It may be necessary to remind the gardener that, from the American spring being short, little can be done before the approach of warm weather; it should therefore be our object to improve the autumn months in the cultivation of such vegetables as can be brought to maturity before the setting in of winter. Having under each head of the Calendar recommended the most appropriate seasons for the different articles, it is unnecessary to dilate farther here, except to invoke my readers to adhere strictly thereto.

frequently subjected early in the season. Some species of plants that, in an advanced stage of growth, will stand a hard winter, are often cut off by very slight frost while germinating, especially if exposed to the heat of the sun after a frosty night, or while in a frozen state. Cabbage, Carrot, Celery, Turnip, and many other growing plants, which survive the ordinary winters of England, are here classed as half-hardy, for the reasons above stated.

The third class, or most tender species, frequently perish from excess of rain. Lima Beans, for instance, have often to be replanted three or four times in the month of May, before any will stand. Melons, Cucumbers, Egg-plants, Tomato plants, &c., are also often cut off by variableness of the weather; indeed, it is unreasonable to expect natives of tropical climates to thrive or even live in a climate adverse to that in which nature first produced them, unless protected or nursed in unpropitious seasons, as recommended under the head forcing vegetables. Those who plant tender things in open gardens early in the season, must reconcile themselves to loss in the event of unfavourable weather, instead of throwing blame on the seedsman.

The fourth class, embracing such species and varieties as, from their nature, are apt to vegetate quickly, are very liable to be devoured by insects before they make any show on the surface. Turnip seed, for instance, will sprout within forty-eight hours after being sown; and under favourable circumstances, most of the species of this class will come up within a week; but if insects attack the seed beds in dry weather, a total loss of crops will be the consequence. Every experienced farmer is convinced of this fact, by having frequently to sow his Turnip ground three or four times before he can get any to stand.

Sometimes a sudden shower of rain will cause plants to grow out of the reach of insects, but every good gardener should have his remedies at hand to apply to seed beds in

general, and especially to those in which plants are raised for the purpose of being transplanted.

Those *species and varieties* embraced in the *fifth and sixth columns*, often take from two to three or four weeks to vegetate in unfavourable seasons. Some plants are retarded by cold, others by excess of dry weather; and at such times, seed may fail to vegetate for want of pressure. In the event of drought after heavy rains, seed and young plants often perish through incrustation of the soil, and from other untoward circumstances, which can neither be controlled or accounted for, even by the most assiduous and precise gardener. It must, however, be conceded, that failures often occur, through seed being deposited too deep in the ground, or left too near the surface; sometimes, for want of sufficiency of seed in a given spot, solitary plants will perish, they not having sufficient strength to open the pores of the earth, and very frequently injudicious management in manuring and preparing the soil will cause defeat.

I have been induced to expatiate, and to designate, in the *seventh range of the preceding table*, such plants as are generally cultivated first in seed beds, and afterward transplanted for the purpose of being accommodated with space to mature in, with a view to answer at once the thousand and one questions asked by inexperienced cultivators, at my counter.

Some persons, from ignorance of the nature and object of raising plants for transplanting, ask for pounds of seed, when an ounce is amply sufficient for their purpose. For example, an ounce of Celery seed will produce ten thousand plants. An ounce of Cabbage seed will produce from three to four thousand, sufficient, when transplanted, to cover nearly half an acre of land, which land, if sown with Spinach, for instance, would require from four to six pounds of seed.

To prevent any altercation on this subject, I would observe, in conclusion, that many other vegetables would admit of being transplanted besides those designated in our table; but as there is considerable risk and trouble inseparable from

the operation, it is needless to apply it, unless there are paramount advantages to be gained, the reverse of which would be the case, under ordinary circumstances, with the generality of those plants not thus designated.

Instead of answering any more queries, I think I shall for the future follow the example of the truly eccentric Abernethy, and refer all enquirers for information to my books, which contain an answer to every important question that has been put to me on the subject of gardening since I became an author.

T. BRIDGEMAN.

* * * PREVIOUS to the commencement of our Catalogue, it may be necessary to remind the reader, that the directions which follow are founded on the results of practical experience in the vicinity of NEW-YORK CITY, where the soil is generally susceptible of gardening operations toward the end of March. These directions may, however, be applied to all other parts of the UNITED STATES, by a *minute observance* of the difference in temperature.

In the extreme northern parts of the State of New-York, as well as in all other places similarly situated, the directions for the beginning of April will apply to the latter end of the same month, with very few exceptions.

In our SOUTHERN STATES, the directions for APRIL, which may be considered as the first gardening month in the EASTERN, WESTERN, and MIDDLE STATES, will apply to January, February, or to whatever season gardening operations may commence in the respective States.

In the *varied climates* of each particular State, if the same rule of application be pursued in accordance with the Calendar, success is certain.

CATALOGUE,

&c., &c.

ARTICHOKE.

ARTICHAUT. *Cynara*.

VARIETIES.

Cynara Scolymus, or French. | *Cynara Hortensis*, or Globe.

THE garden Artichoke is a native of the South of Europe, and much cultivated for the London and Paris markets. It is a perennial plant, producing from the root annually its large squamose heads, in full growth, from June or July, until October or November. The Globe Artichoke, which produces large globular heads, is best for general culture, the heads being considerably larger, and the eatable parts more thick and plump.

Both sorts may be raised from seed,* or young suckers taken from old plants in the spring. A plantation of Artichokes will produce good heads six or seven years, and sometimes longer; but it must be observed, that if a supply of this delicious vegetable be required throughout the season, a small plantation should be made from suckers every spring, for a successive crop, as the young plants will continue to produce their heads in perfection, after the crops of the old standing ones are over.

The most likely way to obtain a supply of Artichokes from seed, is to sow the seed in the latter end of March, or at any time in April, in a bed of good rich earth, or it may be planted in drills one inch deep, and about twelve inches apart. The ground should be light and moist, not such as is apt to become bound up by heat, or that, in consequence of

* One ounce of seed will produce about six hundred plants.

containing too large a proportion of sand, is liable to become violently hot in summer, for this is extremely injurious to these plants. After the plants are up, they should be kept free from weeds, and the earth often loosened around them.

The business of transplanting may be done in cloudy or wet weather, at any time after the plants are from nine to twelve inches high. Having fixed upon a proper soil and situation, lay on it a good quantity of rotten dung, and trench the ground one good spade or eighteen inches deep, incorporating the manure therewith; this being done, take up the plants, and after shortening their tap roots a little, and dressing their leaves, plant them with a dibble, in rows five feet asunder, and two feet from plant to plant, leaving part of their green tops above ground, and the hearts of the plants free from any earth over them, and give each plant a little water to settle the roots.

The winter dressing of Artichokes is an important operation; on it depends much of their future success. This should not be given them as long as the season continues mild, that they may have all possible advantage of growth, and be gradually inured to the increasing cold weather; but it should not be deferred too late, lest by the sudden setting in of hard frost, to which we are subject in the Northern States, the work be neglected, and the plants consequently exposed to devastation and loss.

In the first place, cut all the large leaves close to the ground, leaving the small ones which rise from the hearts of the plants; after this, line and mark out a trench in the middle, between each row, from fourteen to sixteen inches wide, presuming that the rows are five feet apart, as directed. Then dig the surface of the beds lightly from trench to trench, burying the weeds, and as you proceed, gather the earth around the crowns of the plants to the height of about six inches, placing it in gently between the young rising leaves, without burying them entirely under it; this done, dig the trenches one spade deep, and distribute the earth equally

between and on each side of the plants, so as to level the ridges, giving them, at the same time, a neat rounding form; finish by casting up with a shovel the loose earth out of the bottom of the trenches evenly over the ridges, in order that the water occasioned by heavy rains, &c., may immediately run off; on which account the trenches ought to have a gentle declivity, as the lodgment of water about the roots in winter is the greatest evil and danger to which they are exposed, even greater than the most severe frosts to which we are subject.

The beds are to remain so, until there is an appearance of hard frost, when they should be covered with light dung, litter, leaves of trees, or the like, the better to preserve the crowns and roots from its rigour. In this manner, the roots will remain in perfect safety all the winter. As soon as the very severe frosts are over, the beds must be uncovered, and when you perceive the young shoots begin to appear above ground, or rather when they are one or two inches up, then, and not till then, proceed to level down the beds, throwing the earth into the alleys or trenches, and round them in a neat manner; then dig in the short manure, and loosen all the earth around the plants. At the same time, examine the number of shoots arising on each stool, and select three of the strongest and *healthiest looking* on every stool, which are to remain; all above that number are to be slipped off close to the roots with the hand, unless you want some to make new plantations with, in which case an extra number for that purpose are to remain on the parent plants, until they are about eight or ten inches high from their roots, or junction with the old plants, when they are to be slipped off, and planted in a bed prepared in the same manner as directed for the young plants, taking care, at the same time, to close the earth about the crowns of the roots, and draw it up a little to the remaining suckers.

Observe, the spring dressing is to be given when the plants are in the above-described state, whether that happens in

February, March, or April, occasioned by the difference of climate, in the respective States, or by the earliness or lateness of the spring.

The gardeners near London generally take off the side suckers, or small Artichokes, when they are about the size of a hen's egg. These meet with a ready sale in the markets, and the principal heads that are left are always larger and more handsome. The maturity of a full-grown Artichoke is apparent by the opening of the scales; and it should always be cut off before the flower appears in the centre; the stem should be cut close to the ground at the same time.

Artichokes are esteemed a luxury by epicures. To have them in perfection, they should be thrown into cold water as soon as gathered, and after having been soaked and well washed, put into the boiler when the water is hot, with a little salt, and kept boiling until tender, which generally requires, for full-grown Artichokes, from an hour and a half to two hours. When taken up, drain and trim them; then serve them up with melted butter, pepper, salt, and such other condiment as may best suit the palate.

ASPARAGUS.

ASPERGE. *Asparagus officinalis*.

VARIETIES.

Gravesend.		Large Battersea.
Large White Reading.		Large Green, or Giant.

THIS plant is a native of cold climates, and is found growing wild in Russia and Poland, where it is eaten by the cattle the same as grass. It will endure the severity of our winters, and produce its buds, when the weather gets mild; but as garden products are generally scarce after a hard

winter, the gardener who studies his interest will make the most of the spring season, and raise all he can before the market becomes glutted; to this end, he is recommended to prepare for forcing this vegetable, as soon as the coldest of the winter is past. (*See article on Forcing Vegetables.*)

Asparagus may be raised by sowing the seed in the fall as soon as ripe, or in March and the early part of April. One ounce of seed will produce about a thousand plants. It requires some of the best ground in the garden. The seed may be sown in drills, ten or twelve inches asunder, and covered about an inch with light earth. When the plants are up, they will need a careful hoeing, and if well cultivated, and kept free from weeds, they will be large enough to transplant when they are a year old. Some keep them in the nursery bed until they are two years old.

A plantation of Asparagus, if the beds are properly dressed every year, will produce good buds for twenty years or more.

New plantations of Asparagus may be made in autumn, or before the buds get far advanced in spring, say in February, March, or April, according to situation and circumstances. The ground for the bed must not be wet, nor too strong or stubborn, but such as is moderately light and pliable, so that it will readily fall to pieces in digging or raking, and in a situation that enjoys the full rays of the sun. It should have a large supply of well rotted dung, three or four inches thick, and then be regularly trenched two spades deep, and the dung buried equally in each trench twelve or fifteen inches below the surface. When this trenching is done, lay two or three inches of thoroughly rotted manure over the whole surface, and dig the ground over again eight or ten inches deep, mixing this top dressing, and incorporating it well with the earth.

In family gardens, it is customary to divide the ground thus prepared into beds, allowing four feet for every four rows of plants, with alleys two feet and a half wide between each bed. Strain your line along the bed six inches from

the edge ; then, with a spade, cut out a small trench or drill close to the line, about six inches deep, making that side next the line nearly upright ; when one trench is opened, plant that before you open another, placing the plants upright ten or twelve inches distant in the row, and let every row be twelve inches apart.

The plants must not be placed flat in the bottom of the trench, but nearly upright against the back of it, and so that the crown of the plants may also stand upright, and two or three inches below the surface of the ground, spreading their roots somewhat regularly against the back of the trench, and at the same time drawing a little earth up against them with the hand as you place them, just to fix the plants in their due position until the row is planted ; when one row is thus placed, with a rake or hoe draw the earth into the trench over the plants, and then proceed to open another drill or trench, as before directed ; and fill and cover it in the same manner, and so on till the whole is planted ; then let the surface of the beds be raked smooth and clear from stones, &c.

Some gardeners, with a view to have extra large heads, place their plants sixteen inches apart in the rows, instead of twelve ; and by planting them in the *quincunx* manner, that is, by commencing the second row eight inches from the end of the first, and the fourth even with the second, the plants will form *rhomboidal* squares, instead of *rectangular* ones, and every plant will thus have room to expand its roots and leaves luxuriantly.*

* The above directions are intended for family gardens. Those who may wish to raise Asparagus in large quantities for market, should prepare the ground with a plough, and plant two rows in each bed, which may be carried to any length required. If several beds are wanted, they may be planted in single rows four or five feet apart, in order that the plough may be worked freely between them. Frequent ploughing will cause the roots to spread, so as to widen the beds, and the winter dressing may be performed in a great measure with the plough. After the Asparagus is cut, the ground between the beds may be ploughed, and planted with Cabbage, Potatoes, or any other vegetable usually cultivated in rows.

WINTER DRESSING OF ASPARAGUS BEDS.

About the beginning of November, if the stalks of Asparagus turn yellow, which is a sign of their having finished their growth for the season, cut them down close to the earth, carry them off the ground, and clear the beds carefully from weeds.

Asparagus beds must have an annual dressing of good manure; let it be laid equally over the beds, two or three inches thick, after which, with a fork made for the purpose, (which should have three flat tines,) dig in the dung quite down to the crowns of the plants, by which means the roots will be greatly benefited; as the winter rains will wash the manure down among them. It is the practice with some gardeners to dig the alleys at every autumn dressing, and cover the beds with the soil taken out; this may be done for the first two years after the beds are made, but not afterward; as, when the plants are in full growth, their roots and crowns extend into the alleys, and digging them up frequently destroys plants, or renders them too weak to produce buds in perfection. The beds will be greatly benefited if covered to the depth of several inches with leaves, sea-weed, or long litter from the livery stables.

The seedling Asparagus should also have a slight dressing, that is, clear the bed from weeds, and then spread light dung over it, to the depth of one or two inches, to defend the crown of the plants from frost.

SPRING DRESSING OF THE BEDS.

This work should be done from about the latter end of March to the middle of April, or just before the buds begin to rise. After clearing away all long litter, or whatever may encumber the ground, spread the short dung over the whole surface, and dig it in: if the alleys be dug at the same time, it will be very beneficial to the plants. Care must be taken at this season not to wound the crowns with the tines of the fork, but forking the beds should not be neglected, as admit-

ting the sun and rain into the ground, induces the plants to throw up buds of superior size ; to promote such a desirable object, the ground should be kept clear of weeds at all seasons, as these greatly impoverish the soil, and frequently smother the plants.

The gardeners of England raise *Asparagus* in great perfection, and sometimes have buds weighing from three to five ounces each. Loudon says, in his *Encyclopædia of Gardening*, that one grower alone has eighty acres entirely under this crop for the London market.

Asparagus plants will not produce buds large enough to cut for general use, in less than three years from the time of planting, but in the fourth year, when the shoots are three or four inches high, they will bear extensive cutting, which should, however, be discontinued when no large buds are thrown up. The best way of cutting is to slip the knife down perpendicularly close to each shoot, and cut it off slantingly, about three or four inches beneath the ground, taking care not to wound any young buds proceeding from the same root, for there are always several shoots advancing in different stages of growth.

Asparagus is considered a wholesome vegetable, and should not be kept long after it is gathered ; after being well washed, it may be tied in bundles of about a dozen buds each, and boiled in water slightly seasoned with salt, until tender, which will be in about twenty minutes ; take it up before it loses its true colour and flavour, and serve it up on toasted bread, with melted butter, &c.

BEANS. (English Dwarfs.)

FEVE DE MARAIS. *Vicia faba.*

VARIETIES.

Early Mazagan.		Sandwich Bean.
Early Lisbon.		Green Genoa.
Early Long Pod.		Dwarf Cluster.
Large Windsor.		White Blossom.
Large Toker.		Green Nonpareil.
Broad Spanish.		Sword Long Pod.

THE principal cause of these garden Beans not succeeding well in this country, is the summer heat overtaking them before they are podded, which causes the blossom to drop off prematurely; to obviate this difficulty, they should be planted as early in the year as possible; as recommended in the article, "Forwarding Broad Beans." They are generally planted in England, from October to April, for early crops, and from that time to July, for late crops. It sometimes happens that autumn plantings are injured by the coldness of their winters, but an average crop is generally obtained.

In the Eastern, Western, and Middle States, if a few of the best varieties of these Beans be planted in the open ground, as soon in the season as it can be brought into good condition, they will come into bearing in regular succession, according to their different degrees of earliness, and plantings may be repeated every ten days of the first spring month; but it is only from those that are planted early that any tolerable produce can be expected, as they become deficient in quality, as well as in quantity, on the approach of extreme warm weather.

In the Southern States they may be planted in succession throughout the autumn and winter months, which will cause them to bear early in the ensuing season.

The best mode of planting is in drills, drawn two inches deep, in which the seed Beans may be dropped two or three

inches apart, according to their size, and the drills may be from two to three feet asunder. A strong clayey soil is the most suitable; but they often do well in moderately light ground, provided it be well trodden, or rolled, after the Beans are planted.

As soon as the Beans are three or four inches high, they will need a careful hoeing; and if some earth be drawn up to their stems, three or four times in the course of their growth, it will greatly refresh and strengthen them.

When they arrive at full bloom, and the lower pods begin to set, the tops may be broken off. If this be done at the proper time, it will promote the swelling of the pods, as well as their early maturity; for having no advancing tops to nourish, the whole effort of the root will go to the support of the fruit.

Broad Beans are particularly subject to green bugs. Tobacco water, or salt water, will sometimes destroy them; but the most certain way is to watch their first appearance, and pick off that part on which they first settle, and burn it; or if such plants be cut down close to the ground, they will produce fresh shoots, which may bear a good crop.

One quart of seed Beans will be required for every sixty feet of row, allowing the smallest sorts to be planted about two inches apart, and the largest four inches.

The beans should be gathered young, and shelled while fresh. After having been washed, let them be boiled in plenty of water with a little salt and a bunch of green parsley. They take from thirty to forty minutes to boil, according to age, and may be served up with melted butter, gravy, &c.; but they are very good when cooked and eaten with fat pork, or good old-fashioned Hampshire bacon.

BEANS. (Kidney Dwarfs.)

HARICOT. *Phaseolus vulgaris*, etc.

VARIETIES.

Early Denmark.	Early Black Dwarf.
Early Mohawk.	Large White Kidney Dwarf.
Early Valentine.	White Cranberry Dwarf.
Early Yellow Six Weeks.	Red Cranberry Dwarf.
Early Dun-coloured, or Quaker.	Yellow Cranberry Dwarf.
Early China Dwarf.	Refugee, or Thousand to One.
Early Rachel, or Quail's Head.	Marble Swiss Bean.
Early Rob Roy.	Royal Dwarf Kidney, or French.

THESE varieties of Beans, being natives of India, South America, and other warm climates, will not endure the least cold, and it is therefore always hazardous to plant them in the open ground until settled warm weather. The earliest varieties, if planted toward the end of April or the first week in May, will come to perfection in from six to eight weeks after planting. Some of the later varieties will keep longer in bearing, and are esteemed by some on that account. These, with some of the early varieties, may be planted in the months of May and June; and if a regular succession of young beans be required throughout the summer, some of the varieties should be planted every two weeks, from the last week in April until the beginning of August.*

These Beans require a light, rich soil, in which they should be planted in hills, three or four in a hill, or drills about two inches deep, and the Beans two or three inches from each other; the drills may be from two to three feet apart. The Refugees do best when planted in hills. As the Beans progress in growth, let them be carefully hoed, drawing some

* Some gardeners, anxious to have Beans early, are apt to begin planting too soon in the season, and very frequently lose their first crops. It should be recollected, that these Beans are next to Cucumbers and Melons as regards tenderness, and will always grow quicker and yield better, if the planting be delayed until settled warm weather. The Early Mohawk is the hardest, and may sometimes succeed well, if planted about the middle of April, but it is much safer to delay the planting of any quantity until towards the end of the month.

earth up to their stems at the same time, which will cause them soon to be fit for the table.

One quart of Kidney Beans will plant from three hundred and fifty to four hundred hills, according to the size of the Beans, allowing four Beans to each hill, or from two hundred and thirty to two hundred and sixty feet of row, allowing six Beans to every foot.

These Beans should not be suffered to get old and tough before they are gathered; be careful in trimming them, to strip off the strings. To effect this desirable object, break them across; and, in order to preserve their greenness, soak them in salted water for a short time, then put them into the water while boiling, which should be previously seasoned with salt. When they are tender, which will be in from fifteen to twenty minutes, take them up and drain them through a collander, in order to render them capable of absorbing a due share of gravy, melted butter, &c.

BEANS. (Pole or Running.)

HARICOTS A RAMES.

Phaseolus Limensis.

VARIETIES.

Large White Lima.		Speckled Lima.
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Phaseolus Multiflorus.

VARIETIES.

Scarlet Runners.		London Horticultural.
White Dutch Runners.		French Bicolour.
Dutch Case Knife, or Princess.		Red Cranberry.
Asparagus, or Yard Long.		White Cranberry.

THESE species and varieties of Beans may be planted early in the month of May and in June, either in hills three feet distant from each other, or in drills about two inches deep, and the Beans two or three inches apart in the drills.

The poles should be eight or ten feet long, and may be fixed in the ground before the Beans are planted.

The varieties of Lima Beans should not be planted in the open ground until the second week in May, unless the season be very favourable, and the ground warm. As these Beans are apt to get rotten by cold and damp weather, let six or eight be planted half an inch deep round each pole, and afterward thinned, leaving three or four good plants in a hill, which hills should be full four feet distant from each other every way.

The soil for Running Beans should be the same as for Dwarfs, except the Lima, which require richer ground than any of the other sorts. A shovelful of rich light compost, mixed with the earth in each hill, would be beneficial.

If any varieties are wanted before the ordinary seasons, they may be planted in flower-pots, in April, and placed in a greenhouse or garden frame, and being transplanted in May, with the balls of earth entire, will come into bearing ten or fourteen days earlier than those which, in the first instance, are planted in the open ground.

It will require about a quart of Lima Beans to plant one hundred hills. A quart of the smallest-sized Pole Beans will plant three hundred hills and upward, or about two hundred and fifty feet of row, and the largest runners will go about as far as the Lima Beans.

Lima Beans should be shelled while fresh, and boiled in plenty of water until tender, which generally takes from fifteen to twenty minutes. The mode of cooking and preparing the other sorts, is the same as for Kidney Dwarfs.

BEET.

BETTERAVE. *Beta vulgaris*.

VARIETIES.

Early Blood Turnip-rooted.	Early Scarcity.
Early Long Blood.	Mangel Wurtzel.
Extra Dark Blood.	French Sugar, or Silesia.
Yellow Turnip-rooted.	Sir John Sinclair's.

BEETS, in their several varieties, are biennial, and the best blood-coloured are much cultivated for the sake of their roots, which are excellent when cooked, and very suitable for pickling after being boiled tender; they also, when sliced, make a beautiful garnish for the dish, and the young plants are an excellent substitute for Spinach.

The Mangel Wurtzel and Sugar Beets are cultivated for cattle. Domestic animals eat the leaves and roots with great avidity. They are excellent food for swine, and also for milch cows; and possess the quality of making them give a large quantity of the best-flavoured milk. The roots are equally fit for oxen and horses, after being cut up into small pieces and mixed with cut straw, hay, or other dry feed.*

A small bed of the earliest Turnip-rooted, and other esteemed kinds of Beets, may be planted in good rich early ground the first week in April, which, being well attended to, will produce good roots in June.

Draw drills a foot apart, and from one to two inches deep; drop the seed along the drills one or two inches from each

* An acre of good, rich, loamy soil has been known to yield two thousand bushels of beet-roots, some of which weighed from fifteen to twenty pounds each. To produce such enormously large roots, they should be cultivated in drills from two to three feet apart, and the plants thinned to ten or twelve inches in the rows. It is generally conceded, however, that moderate-sized roots contain more saccharine matter, in proportion to their bulk, than extra large roots, and that twenty tons, or about seven hundred bushels, are a very profitable crop for an acre of land, and would be amply sufficient to feed ten cows for three or four months of the year. A gentleman in Connecticut computes the products of one-fourth of an acre of good land, at eight tons, which, he says, will support a cow the whole year. He allows five tons to feed on for nine months, and the other three tons to be sold, and the proceeds applied to the purchase of other food, to be given from the time the roots fail in the spring, until new roots are produced.

other, and cover them with earth. When the plants are up strong, thin them to the distance of six or eight inches from each other in the rows. The ground should be afterward hoed deep round the plants, and kept free from weeds.

If the planting of Beet seed, for general crops, be delayed until May or June, the roots will be much larger and better than those from earlier planting, which, from being frequently stunted in growth by the various changes of weather, become tough, stringy, and of unhandsome shape. In case of the failure of crops, or of unfavourable weather in June, Beet seed planted the first week in July will sometimes produce large, handsome roots, which may be preserved for winter use.

The most suitable ground for Beets is that which has been well manured for previous crops, and requires no fresh manure, provided it be well pulverized.

It is always best to thin Beets while young. If the tops are used as a vegetable, they should not be left too long for this purpose, or they will greatly injure the roots of those that are to stand. Beds that are to stand through the summer, should be kept clean by repeated hoeings; and the roots intended for winter use should be taken up in October, or early in November, and stowed away, as directed in the calendar for those months.

Allowing Beet seed to be planted on the gardening plan, it will require at the rate of ten pounds for an acre of land, which is two pounds and a half for a rood, and one ounce for every perch, pole, or rod. If cultivated on the field system, that is, by planting them a sufficient distance apart to admit of ploughing between each row, one half the quantity of seed will be sufficient, or even less, if sown regular. If it be an object with the cultivator to save his seed, he may drop some in each spot where a plant is required, and thin them as before directed.

It may be necessary to add, that one pound of Beet seed will measure about two quarts, and as each capsule contains four or five small seed, thinning out the surplus plants is indispensable to the production of good roots.

BORECOLE, OR KALE.

CHOU FRISE VERT. *Brassica oleracea*, etc.

VARIETIES.

Green Curled, or Scotch.	Jerusalem, or Buda.
Dwarf Brown, or German.	Cesarean Kale.
Purple Fringed.	Thousand-headed Cabbage.

THERE are several sub-varieties of this genus of plants besides those above specified, most of which have large open heads, with curled wrinkled leaves. The Dwarf Curled, or Finely Fringed sorts, are much cultivated in Europe for the table; and the coarse and tall-growing are considered profitable for cattle. The Thousand-headed Cabbage, and Cesarean Kale, grow from three to five feet high, and branch out from the stem, yielding an abundant supply of leaves and sprouts in the winter and spring.

For the garden, these several varieties may be treated in every respect as Winter Cabbage. The seed may be sown from about the middle of May to the first week in June, and the plants set out in the month of July, in good rich ground. They are never so delicious as when rendered tender by smart frosts; they are valuable plants to cultivate, particularly in the more Southerly States, as they will there be in the greatest perfection during the winter months; they will also, if planted in a gravelly soil, and in a sheltered warm situation, bear the winter of the Western States; and may be kept in great perfection in the Eastern States, if taken up before the frost sets in with much severity, and placed in trenches, up to their lower leaves, and then covered with straw or other light covering: the heads may be cut off as they are required for use; and in the spring, the stems being raised up, will produce an abundance of delicious greens.

One ounce of good Borecole seed will produce about four thousand plants, and may be sown in a border four feet by ten, or thereabout.

BRUSSELS SPROUTS.

CHOU DE BRUXELLES AGETS. *Brassica oleracea*.

THIS plant frequently grows from three to five feet high, and produces from the stem small heads resembling cabbages in miniature, each being from one to two inches in diameter. The top of the plant resembles the Savoy, when planted late. The sprouts are used as winter greens, and they become very tender when touched by the frost.

The seed may be sown about the middle of May, in the same manner as Borecole, and the plants set out with a dibble early in July. The subsequent treatment must be in every respect as for Borecole.

Some gardeners, with a view to furnish the New-York markets with greens early in the spring season, when vegetables in general are scarce, cultivate the common Rape, (*Brassica Rapus*;) it being a good substitute for Brussels Sprouts, which are not always attainable after a hard winter. If Rape seed be sown early in September, the plants will survive an ordinary winter, and produce top shoots or sprouts early; but it is best sown as soon as the ground is susceptible of cultivation in the spring, say the last week in March. The sprouts should be cut while young, as such greens then command the best prices, and are more palatable than when far advanced in growth.

It may be necessary to add that, in cooking these sprouts, as also Kale, Colewort, and greens in general, they should be put into hot water, seasoned with salt, and kept boiling briskly until tender. If it be an object to preserve their natural colour, put a small lump of pearlash into the water, which also makes the coarser kinds of cabbage more tender in the absence of meat.

BROCCOLI.

CHOU BROCOLI. *Brassica oleracea Italica.*

VARIETIES.

Early White.	Large Purple Cape.
Early Dwarf Purple.	White Cape, or Cauliflower.
Early Green.	Sulphur-coloured Cape.
Dwarf Brown.	Branching Purple.
Large Late Purple.	Large Late Green.

THE several varieties of Broccoli and Cauliflower may be justly ranked among the greatest luxuries of the garden. They need only be known in order to be esteemed. The Broccoli produces heads, consisting of a lump of rich, seedy pulp like the Cauliflower, only that some are of a green colour, some purple, some brown, &c., and the white kinds so exactly resemble the true Cauliflower, as to be scarcely distinguishable, either in colour or taste.

Broccoli is quite plentiful throughout England the greater part of the year, and it is raised with as little trouble as Cabbages are here. The mode of raising the purple Cape Broccoli is now generally understood in this part of America; but the cultivation of the other kinds has been nearly abandoned, on account of the ill success attending former attempts to bring them to perfection.

In some of the Southern States, where the winters are not more severe than in England, they will stand in the open ground, and continue to produce their fine heads from November to April. In the Eastern, Western, and Middle States, if the seed of the late kinds be sown in April, and the earlier kinds in May, in the open ground, and treated in the same manner as Cauliflower, it would be the most certain method of obtaining large and early flowers; but as only a part of these crops can be expected to come to perfection before the approach of winter, the remainder will have to be taken up, laid in by the roots, and covered up with earth to the lower leaves, in some sheltered situation, to promote the finishing of their growth.

Those who are desirous of obtaining Broccoli and Cauliflower in any quantity, so as to have all the different varieties in succession throughout the winter months, should have places erected similar to some of our greenhouses: the back and roof may be made of refuse lumber, which being afterward covered with fresh stable dung, will keep out the frost. The place allotted for Cape Broccoli and Cauliflower should have a glazed roof to face the south; the sashes must be made to take off in mild weather, but they should be always kept shut in severe cold weather, and covered with mats, or boards, litter, &c., so effectually as to keep out the frost.

The hardy kinds of Broccoli may be preserved without glass, by having shutters provided to slide over the front in extreme cold weather, which may be covered over with fresh stable dung or other litter. If these plants get frozen, it will be necessary to shade them from the full rays of the sun until they are thawed; this may be done by shaking a little straw on the bed as they lay.

It may not, perhaps, be generally understood, that the sudden transition from cold to heat is more destructive to vegetables than the cold itself. If plants of any kind get frozen, and cannot be screened from the full rays of the sun, they should be well watered as the air gets warm, and before they begin to thaw; this will draw out the frost, and may be the means of saving the plants.

The proper time for sowing the seed of Purple Cape Broccoli is from the tenth to the twenty-fourth of May: * those who intend to provide a place for the winter keeping

* It has been proved by repeated experiments, that the Purple Cape Broccoli succeeds better in our climate than any other variety; and, also, that if Broccoli or Cauliflower plants be retarded in growth by extreme heat, they seldom arrive at full perfection. It is, therefore, important that the time of sowing the seed of Cape Broccoli be so regulated as to allow, say six weeks of the summer, for the plants to grow in, previous to their being transplanted, and about seven or eight weeks between that and the commencement of cool autumn weather, which is essential to mature them.

If seed be sown much before the middle of May, or so early that the plants arrive at full growth in the heat of summer, and thereby become

of the other kinds, may sow seed of the most esteemed varieties at the same time, or in two or three separate sowings, a week apart.

In order to insure good stout plants, let the seed at this season be sown in a moderately shaded border. It is best to sow it in shallow drills, drawn three or four inches apart, in which case, one ounce of seed will occupy a border of about four feet in width by twelve in length, and produce about four thousand strong plants. (*See article Cabbage.*)

In the beginning of July, or when the plants are of sufficient size, they should be transplanted into extraordinarily rich ground, which should be previously brought into good condition. This being done, plant them in rows two feet and a half apart, and two feet distant in the rows. As soon as they have taken root, give the ground a deep hoeing, and repeat this two or three times in the course of their growth, drawing some earth around their stems.

Some of the Cape Broccoli, if attended to as directed, will come to perfection early in September and in October; the other kinds will produce their heads in regular succession throughout the winter and spring months, according to their different degrees of earliness, provided an artificial climate be provided for them. These, of course, with whatever may remain of the Cape Broccoli, will have to be taken up early in October, and laid in carefully, with the roots and stems covered with earth as far as their lower leaves. Those who have not a place provided, may keep a few in frames, or in a light cellar; but every gardener and country gentleman should have suitable places erected for a vegetable that yields such a delicious repast, at a time when other luxuries of the garden are comparatively out of our reach.

stunted, they generally button, instead of forming perfect heads of flowers, and are consequently of no use but for cattle.

In some of the Southern States, late planting of Broccoli and Cauliflower succeeds better than early, because the winters are calculated to mature these vegetables, from their not being subject to injury from *slight* frost, in a late stage of their growth.

CAULIFLOWER.

CHOUFLEUR. *Brassica oleracea botrytis.*

VARIETIES.

Early White.

Late White.

Hardy Red, or Purple Cauliflower.

THIS is a first rate vegetable, to obtain which, great pains must be taken in every stage of its growth, the extremes of heat and cold being very much against it: which circumstance accounts for good Cauliflowers being scarcely attainable in unpropitious seasons, and which the novice falsely attributes to defectiveness of the seed.

To produce early Cauliflower, the seed should be sown between the sixteenth and twenty-fourth of September, in a bed of clean, rich earth. In about four or five weeks afterward, the plants should be pricked out into another bed, at the distance of four inches from each other every way; this bed should be encompassed with garden frames, covered with glazed sashes, and boards or shutters; the plants should be watered and shaded a few days till they have taken root; they will afterward require light and air every mild day throughout the winter; but the outsides of the frames must be so lined and secured, and the tops of the beds so covered, as to keep out all frost.

The plants should be well attended to until the time of transplanting in the spring; and those who have not hand or bell glasses, so as to enable them to set some out by the latter end of March, should have a frame ready about the last week in February, in order that they may be transplanted to the distance of eight or nine inches apart; this would prevent them from buttoning or growing up weak; if this be not done, some of the strongest plants should be taken out of the beds and planted in flower pots, which may afterward be placed in a frame or greenhouse, until the weather be warm and settled, which may be expected soon after the middle of

April. They should then be turned out with the balls of earth entire, and transplanted into a bed of the richest earth in the garden, at the distance of two feet and a half from each other every way; the residue may be taken up from the frame the last week in April, or earlier, if the season proves mild, by means of a garden trowel, and transplanted as above.*

The plants should afterward be well cultivated, by hoeing the ground deep around them, and bringing some earth gradually up to their stem, so as to push them forward before the approach of warm weather. When the soil has been drawn up to the plants some little time, fork the ground between the rows lightly over, which will promote their growth. They should be liberally supplied with water in dry weather; those out of flower twice a week, and those in, every other day, which will contribute to their producing very large heads. As the flower heads appear, the larger leaves should be broken down over them, to defend them from the sun and rain, in order that the heads or pulps may be close, and of their natural colour.

Plants from the autumn sowing are generally allowed to succeed best; but good Cauliflowers are sometimes produced from seed sown in a hot-bed toward the end of January, or early in February. Great pains must be taken to have the bed in good condition to receive the seed; when the plants are up, they must have air every mild day, and as they pro-

* Many persons are apt to forget, that the successful cultivation of Cauliflower depends on the particular seasons in which the plants are raised and set out; and, consequently, instead of raising their own plants in the right seasons, apply for them at the seed-stores and gardens, in May and June. Now, it should be recollected, that if early Cauliflower do not arrive at, or near perfection, by the end of June, the plants get stunted by the heat, and seldom yield any thing but leaves, except the summer should prove mild, in which case, some of the early plants may flower in autumn; but it is needless to risk the setting out of early Cauliflower plants later than April for the sake of such chance, because plants raised from seed sown about the middle of May, and transplanted in July, are by far the most likely to produce good fall Cauliflower.

gress in growth, they should have as much air as possible, consistent with their preservation; but the beds must be kept covered up every night, as long as there is any danger of frost. When the plants are three or four inches high, they must be pricked out three or four inches apart into another bed, and by the latter end of April they may be transplanted into the ground, and treated in every respect the same as the other.

In the early part of May, Cauliflower seed may be sown in the open border, in drills, as recommended for Broccoli, and one ounce of seed will produce about four thousand plants. These plants should be pricked out in June, and transplanted into good ground early in July, to flower in Autumn: those that are not likely to flower by the last of October, should be taken up and provided for in the manner recommended for Broccoli.

Cauliflower, and also Broccoli, should be gathered while the pulp is close and perfect. After having trimmed off some of the outside leaves, let them be boiled in plenty of water seasoned with salt, taking care to skim it, and also to ease the cover of the pot so as not to confine the steam. Take them up as soon as the fork will enter the stems easily, which will be in from ten to twenty minutes, according to their size and age; drain them so as to make them susceptible of absorbing a due proportion of gravy, melted butter, &c. This renders them a palatable and dainty dish.

CABBAGE.

CHOU. *Brassica oleracea, etc.*

VARIETIES.

Early Imperial.	Large Bergen, or American.
Early Dwarf Dutch.	Late Flat German.
Early York.	Large Green Glazed.
Early Sugarloaf.	Large Late Drumhead.
Early Emperor.	Red Dutch, for pickling.
Early Wellington.	Green Globe Savoy.
Early Heart-shaped.	Large Cape Savoy.
Early London Market.	Green Curled Savoy.
Early London Battersea.	Turnip-rooted, in varieties

THE early sorts of spring Cabbage may be raised in various ways. Some sow the seed between the tenth and twenty-fourth of September, pricked out and managed the same as Cauliflower plants, only that they are more hardy, and may sometimes be kept through the winter, without sashes.

Some prefer sowing the seed in a cold-bed, covered by a garden frame with sashes. If this frame be placed on a warm border, and kept free from frost, and the seed of the early kinds sown the latter end of January, or early in February, these plants will be better than those raised in the fall; as they will not be so liable to run to seed, and they will be more hardy, and full as early as those raised in hot-beds in the spring.

Or, if a heap of fresh horse manure be deposited on the ground intended for the raising of early plants before the frost sets in, the same may be removed some mild day in January or February, and temporary frames made by driving stakes in the ground, and nailing planks or slabs thereto. The ground being then dug, the seed sown, and covered up with sashes, will soon produce plants in perfection. The frames should be well protected, by placing the manure around them, and covering the tops with mats, boards, &c., as directed for hot-beds in the Calendar for February and March.

It is customary with gardeners about New-York to raise their plants in hot-beds. In order to do this, the beds should be prepared, as directed in a future page of this book, (see Index,) so as to be ready to receive the seed by the latter end of February, or early in March. Plants thus produced, as well as those raised as before directed, will be fit to transplant about the middle of April, and should be carefully planted, with a suitable dibble, in good ground, from sixteen inches to two feet apart, according to size and kind: these by being hoed often, will produce good Cabbages in June. If seed of the large early kinds be sown in a warm border, early in April, they will produce plants fit to transplant in May, which will make good Cabbages for summer use.*

The seed of Red Cabbage may be sown toward the end of April or early in May, and that of Savoys and late Cabbage in general, may be sown at two or three different times, between the middle and the end of May, in fresh rich ground.

The most certain way of raising good strong plants in the summer season, is to sow the seed in a moderately shaded border, in shallow drills drawn three or four inches apart. One ounce of seed sown in this manner, will occupy a border of about four feet in width by twelve in length, and produce about four thousand stout plants; whereas, if seed be sown broad-cast, as is the usual custom, two ounces of seed

* As numerous species of insects attack plants of the *Brassica* or Cabbage tribe, in every stage of their growth, great caution is necessary in their cultivation. For a prevention to the attacks of fleas or flies, see page 19 of the General Remarks. Perhaps the most effectual way of saving plants from grub-worms, is not to transplant any, during the month of June. Seed beds are very seldom attacked; but if they should be, they may be protected by digging trenches around them, and throwing in lime, salt, or ashes, sufficient to prevent the ingress of the worms. If seed of the various kinds be sown at the times recommended, the early varieties will be so far advanced in growth before the grub-worms prevail, as to be out of their reach; and by the time the late sown plants are ready to transplant, the worms will be harmless, because they turn gray toward the end of June, and by the middle of July, the time recommended for general transplanting, the danger from grub-worms is over. For the destruction of caterpillars, see General Remarks, page 20.

may not produce so many good plants, as the one ounce on the plan recommended.

The Bergen, and other large kinds, should be transplanted the second and third week in July, in rows thirty inches asunder, and the plants about two feet apart in the rows: the Savoy and smaller sorts may be planted about the same time, but from four to six inches nearer every way. Cabbage succeeds best in a fresh rich soil, and the ground should be deeply hoed or ploughed, at least three times, during their growth.

The *Brassica Rapa*, or Turnip Cabbage, produces its bulb, or protuberance, on the stems above ground, immediately under the leaves. It is eatable when young, or about the size of a garden Turnip.

The seed may be sown in April or May, and the plants afterward treated the same as Cabbage, only that in earthing up the plants you must be careful not to cover the globular part.

They are much more hardy than Turnips. In England the bulbs often grow to upward of twenty inches in circumference, and weigh from ten to twelve pounds. They are cultivated for the feeding of cows and sheep, as well as for table use; in either case they treat them as they do Cabbage, or sow them like Turnips, and afterward hoe them out to proper distances.

The *Brassica Napus*, or Turnip-rooted Cabbage, has an oblong thick root in the form of a winter Radish; it is extremely hardy, and will survive very hard frosts; the seed should be sown in rich ground, and treated in every respect as Turnips, observing to thin the plants with a hoe to the distance of sixteen inches apart. Their roots will be much larger and better when treated in this way, than if transplanted.

The *Brassica Napus*, variety *esculenta*, is sometimes cultivated as a salad herb. It is held in great esteem by the French as a culinary vegetable, and is called the Navet, or

French Turnip. In France, as well as in Germany, few great dinners are served up without it, in some shape or other.

COLEWORT, OR COLLARDS.

CHOU VERT. *Brassica oleracea*.

THIS is a species of Cabbage which is eaten when young; it so nearly resembles the early kinds of Cabbage, that it is seldom cultivated. The English frequently sow the seed of early heading kinds of Cabbage as a substitute, which being done at different seasons, enables them to procure a supply of fresh greens from their gardens every day in the year. This is not attainable here, on account of the extremes of heat and cold; but Collards would prove very valuable and acceptable, in the event of an unfavourable season for fall Cabbage.

If the seed of Early York, Early Dutch, or other early kinds of Cabbage, be sown in June, July, and August, and transplanted as they become fit, into good ground, from fifteen to eighteen inches apart, the first planting would make good heads for fall use; and the plants of late sowings, if transplanted in September and October, in a warm border, would produce tender, sweet-eating greens for use in the early part of winter; the latter plantings may be placed ten or twelve inches from plant to plant. These could be easily sheltered on the approach of severe weather, without being taken up. The cultivation of Collards is well adapted to our Southern States, as there they need no protection in winter.

CARDOONS.

CARDON. *Cynara cardunculus*.

THE Cardoon Artichoke, a native of Candia, is much cultivated in Europe for culinary purposes, such as for salads, soups, stews, &c.

The stems of the leaves being thick and crisp, are the eatable parts, after being blanched. They are in perfection in autumn and winter.

The seed may be sown in a bed of rich earth in the month of April; and one ounce will produce about six hundred plants: when the plants are up strong, they should be thinned so as to leave them four or five inches apart, to prevent them from becoming weak. They may be transplanted in June, at the distance of four feet from each other every way; observe, before planting, to dress their tops and roots the same as Celery. As they advance in growth, they are to be earthed up for blanching, keeping the leaves close together; this may be done with bass or matting, as practised with Endive; they are afterward to be earthed up gradually from time to time, until whitened to a sufficient height. As winter approaches, Cardoons must be taken up and laid away like Celery, or they may be preserved with sand in a cellar.

CARROT.

CAROTTE. *Daucus carota*.

VARIETIES.

Early Orange.
Long Orange.
Altringham.

	Long Lemon-coloured.
	Blood Red.
	Long White.

THE Carrot is a native of Britain, and grows by the roadside in many parts. As a culinary vegetable, it is much used in soups and stews, and forms a dish with boiled beef, &c. The coarse sorts are cultivated as fodder for cows, sheep, oxen, and horses, and are considered profitable, as

they frequently yield upward of four hundred bushels to an acre, when cultivated on the field system.

For the garden, the Early Orange should be cultivated for spring and summer use ; but the Long Orange is more suitable for main crops, on account of its bright orange colour, as well as for its great size and length. Carrots grow to great perfection in a rich loamy soil, and may be raised in drills drawn about one inch deep, and twelve inches asunder. A small bed may be planted at the latter end of March for an early crop, and from that time to the end of May for successive crops ; but the principal crop should not be sown too soon, as the early plantings are apt to produce seed-stalks, and, consequently, stringy and useless roots.

The most suitable ground for late Carrots, is that which has been well manured for previous crops, and requires no fresh manure. If the seed be sown in June, and the plants thinned out to the distance of five or six inches from each other when young, and kept hoed, they will yield an abundance of fine roots for winter and spring use, by being taken up in autumn, and preserved either in sand in a cellar, or covered up in pits in a garden, as directed in the Calendar for November.

Although Carrot seed is naturally small and light, it seldom fails to vegetate in favourable seasons ; it, therefore, need not be sown too thick in ground not apt to produce weeds. If a root could be insured to grow unmolested in every instance where a seed may be deposited, two pounds would be more than sufficient for an acre of land ; but gardeners generally use four or five pounds to the acre, in order that the rows may be more easily traced in the event of a luxuriant growth of weeds. To avoid risking an unequal crop in small gardens, half an ounce of seed should be allotted for every pole, perch, or rod, or twenty ounces for a rood of land. On light ground, the use of a roller would be beneficial in dry weather, excess of which is detrimental to the germination of Carrot, as well as of all other light seed.

CELERY.

CELERI. *Apium graveolens.*

VARIETIES.

White Solid.

Red-coloured Solid.

New White Lion's Paw.

North's Red Giant.

Celeriac, or Turnip-rooted.

THIS vegetable, so much esteemed as a salad, is known in its wild state by the name of Smallage ; and is found in great abundance by the sides of ditches, and near the seacoast of Britain. The effects of cultivation are here strikingly exhibited, in producing from a rank, coarse weed, the mild and sweet stalks of the Celery. This circumstance should stimulate the young gardener to aim at improvement in the cultivation of plants in general.

It is customary with some gardeners to raise their early plants in hot-beds ; but as plants thus raised are apt to produce seed-stalks, it is much safer to cultivate them in cold-beds, prepared as directed for the raising of early Cabbage plants. The seed for a general crop may be sown the last week in March, or early in April, in rich, mellow ground, and in a situation where the plants can be protected from the parching heat of a summer sun (a border against a north aspect is the most suitable). Some sow the seed broad-cast, but the plants will be much stouter if raised in drills. The drills may be half an inch deep, and six inches apart, so that a small hoe can be worked between the rows ; and if properly attended to, every ounce of seed so sown will produce ten thousand strong plants or more.

The early sown plants should be pricked out in a nursery bed of cool rich earth, as soon as they are two or three inches high, there to remain about a month, after which they will be fit to transplant into the trenches.

Choose for this purpose a piece of rich ground, in an open exposure ; mark out the trenches by line, ten or twelve inches wide, and allow the space of three feet between them, which

will be sufficient for the early plantations. Dig each trench a moderate spade deep, laying the dug-out earth equally on each side, between the trenches; put three inches deep of very rotten dung in the bottom of each trench, then pare the sides, and dig the dung and parings with an inch or two of the loose mould at the bottom, incorporating all well together, and put in the plants.*

Previous to planting, trim the plants, by cutting off the long straggling leaves, and also the ends of the roots. Let them be planted with a dibble, in single rows, along the middle of each trench, five or six inches between plant and plant; as soon as they are planted, give them a plentiful watering, and let them be shaded until they strike root and begin to grow.

The main crops may be planted in the same way, but in trenches four feet distant from each other, and an inch or two farther from plant to plant; or in beds made in the following manner, which, for the ease of preserving the plants in winter, will be found extremely convenient, besides a greater quantity can be raised on a given piece of ground.

Lay out the ground into beds four feet wide, with alleys between, three feet; dig the beds a spade deep, throwing the earth on the alleys: when done, lay four or five inches of good, well-rotted dung all over the bottom of the beds, dig and incorporate it with the loose earth, and cover the whole with an inch or two of earth from the alleys; plant four rows

* Some gardeners are accustomed to cultivate Celery on the level ground; others, after making their trenches in the usual way, go to the expense of carting peculiar soil from a distance, with which they replenish their trenches until nearly full. Those who have pursued the latter plan, say that they are rewarded for their trouble by gathering roots of superior size and quality; but it is doubtful whether it would prove profitable to practice this plan on an extensive scale. It may, however, be judicious in those gardeners, whose subsoil, or under stratum, is inferior, or ill-adapted for the growth of Celery, to cultivate it in shallow drills, or furrows worked out with a plough, by which means they may secure good soil to plant in, and also to earth up with. In such cases the rows must be from four to five feet apart, and frequent ploughing between them would promote the growth of the plants.

in each bed at equal distances, and from six to eight inches apart in the rows; after which, give them a plentiful watering, and shade them.

The plants must be hoed occasionally, until grown of sufficient size for earthing, which is done with the assistance of boards, by laying them along the rows, to support the leaves while you are putting in the earth from the alleys, and removing them as you progress in the business.

The earthing should never be done when the plants are wet, as this is apt to make the Celery rusty, but should be performed gradually in fine weather as the plants progress in growth, repeating the earthing every two weeks; at which time care should be taken to gather up all the leaves neatly, and not to bury the hearts of the plants. When they are grown two feet high, and well blanched, they are fit for the table.

As Celery will grow three or four feet high in one season, it will be necessary to delay the planting of that which is intended for winter use until the latter end of July, but the trenches should always be got ready soon enough to avoid a serious drought, which often delays the planting till too late in the season. The blanching of Celery for winter use may be delayed until October.

By market gardeners who raise Celery on a large scale, the trenches may be worked out with a plough, and finished with a spade or hoe. The ground may also be ploughed between each row of Celery previous to earthing it up; this will save much labour.

The *Celeriac*, or Turnip-rooted, may be planted either on level ground or in shallow drills; the root of it swells like a Turnip, and may be preserved in sand through the winter. The French and Germans cut it in slices, and soak it a few hours in vinegar; by such simple preparation, it becomes mellow as a pineapple, and affords a delicious and very nourishing repast.

CORN SALAD, OR FETTICUS.

MACHE OU DOUCETTE. *Valeriana locusta*.VARIETY.—*Olitoria*.

THIS plant grows spontaneously in the corn-fields of England, hence it is called Corn Salad; and from its being sufficiently hardy to stand the winter, and affording an early pasturage, it has acquired the appellation of Lamb's Lettuce. It is cultivated as a salad for winter and early spring use. The seed may be sown in rich, clean ground, the latter end of August or early in September.

Some gardeners sow the seed in beds four or five feet wide, with paths between each bed, just sufficient to admit of room for hand-weeding; but it will vegetate more freely if sown in drills half an inch deep, provided it be carefully covered. The drills may be about six inches apart, or just sufficient to admit a small hoe to work between the rows; for if the plants are not cleared of all weeds while young, they will be more plague than profit.

Fetticus must be covered up with straw at the approach of severe weather, to preserve it in good condition for use in the early part of the ensuing spring, as that is the season which most amply remunerates the cultivator.

The seed of Fetticus is small and light, but it will admit of being sown thick, say at the rate of from four to six pounds to an acre of land.

CRESS.

CRESSON. *Lapidium sativum.*

VARIETIES.

Curled, or Peppergrass.

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Broad-leaved Garden.

CRESS is a small salad herb, and is generally used with Lettuce, White Mustard, Rape, Chervil, &c. It may be sown very thick in little drills, as should salad seed in general, and cut before it comes into rough leaf. A small quantity in the salad season, which is spring and autumn, may be sown every week in rich ground, free from weeds.

CRESS, (Water.)

CRESSON DE FONTAINE. *Sisymbrium nasturtium.*

THE Water Cress is a creeping, amphibious perennial, and is grown very extensively for the London Markets. Loudon says, in his *Encyclopædia of Gardening*, that "The most suitable description of water is a clear stream, not more than an inch and a half deep, running over sand or gravel; the least favourable, deep, still water, or a muddy bottom. It is highly advantageous to make the plantations in newly-risen spring water, as the plants do not only thrive better in it, but, in consequence of its being rarely frozen, they generally continue in vegetation, and in a good state for gathering, through the whole winter season. The plants are disposed in rows parallel with the course of the stream, about eighteen inches apart. When these plants begin to grow in water one inch and a half deep, they soon check the current so as to raise the water to the height of three inches above the plants, which is considered the most favourable circumstance in which they can be placed. It is absolutely necessary to have a constant current, as where there is any obstruction to the stream, the plants cease to thrive. After they have been cut about three times, they begin to stock, and then the oftener they are cut the better.

CUCUMBER.

CONCOMBRE. *Cucumis sativus*, etc.

VARIETIES.

Early Frame.		Long Green.
Early Green Cluster.		Extra Long Green.
Early Green Table.		Long White Turkey.
Long Prickly.		White Spined.
Short Prickly.		West India, or Gherkin.

THE *Cucumis sativus*, or common Cucumber, is a native of the East Indies, and of nearly as great antiquity as the vine. It was introduced into England in 1573, and is extensively cultivated in forcing frames, and in the open air. In March, they are sold in the London Markets for a guinea a dozen; and in August and September for one penny per dozen.

As Cucumbers are much used in New-York, it should be an object with gardeners to have them in the market early; directions for raising them out of the ordinary season, are therefore given in a future page, under the head Forcing Vegetables; to which the reader is referred. Cucumbers may be raised in the open ground by planting seed the first week of May, in hills four feet apart; or if the ground be light, basins formed an inch below the level of the surface would be beneficial.* Previous to planting, the ground should be prepared by incorporating a shovelful of rotten dung with the earth in each hill, after which four or five seed may be planted half an inch deep. One ounce of good seed is sufficient for two hundred hills and upward.

Cucumbers are liable to be attacked by a yellow fly, which sometimes devours young plants; these and other insects may be killed by sowing tobacco dust, soot, powdered char-

* The term hill is frequently made use of by gardeners and farmers, to designate a situation allotted for a given number of seed, whereas, such seed are more frequently deposited below the level of the surface than above it; yet, as the plants progress in growth, hills are frequently formed around them, which makes the term applicable, or rather reconciles the apparent contradiction.

coal, and the like, round about the vines when they first come up, or by applying the liquid recommended in page 19 of the General Remarks. After this is done, the plants may be thinned to two or three in a hill, and the ground carefully hoed, drawing a little earth round them at the same time. The vines should be kept free from weeds, and if the weather proves dry, a gentle watering now and then, given in the evening, will be of considerable service.

Picklers may be raised by planting the seed at any time in July. When the vines begin to bear, they should be looked over, and the fruit gathered as soon as it becomes fit, as the plant will cease to bear much if the fruit be permitted to get yellow.

CHIVES, OR CIVES.

CIVETTE. *Allium schœnoprasum.*

THIS is a small species of Onion, and grows in large tufts; it is propagated by offsets from the roots, and may be planted either in spring or autumn, in rows ten or twelve inches apart, and the bulbs three or four inches apart in the rows; they will soon take root, and increase very fast, forming large bunches of bulbs. They make handsome edging for beds or borders.

EGG-PLANT.

MELONGENE AU AUBERGINE. *Solanum melongena.*

VARIETIES.

Purple, for cooking.

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White, for ornament.

THE seed of the Purple Egg-plant may be sown in a hot-bed about the first of March; and the sashes must be kept down close until the plants come up, after which a little air

may be given in the heat of the day.* Toward the middle of May, if the weather be warm and settled, the plants should be set out from twenty-four to thirty inches apart, in a rich, warm piece of ground; and if kept clean, and a little earth be drawn up to their stems when about a foot high, they will produce plenty of fruit.

Plants of the white variety may be raised in the same manner, and transplanted into pots in May; or if some of the seed be sown in a warm situation the first week in May, these may come to perfection in the course of the summer. This variety, though generally cultivated for ornament, is good when cooked.

As Egg plants will not grow in the open ground until settled warm weather, and are apt to perish from being transplanted too early, the gardener should be provided with small pots, in order that the plants may be transplanted therein early in May, and placed in a frame, there to remain until the first week in June, at which time, if they are turned out and planted, with the balls of earth entire, they will soon take root and grow freely.

Select the fruit when at maturity; cut it into slices, and parboil it in a stewpan; when softened, drain off the water; it may then be fried in batter made with wheaten flour and an egg, or in fresh butter with bread grated fine and seasoned before it is put in the pan, with pepper, salt, thyme, and such other herbs as may best suit the palate. Some use Marjoram, Summer Savory, Parsley, Onion, &c.

* Egg-plant seed will not vegetate freely without substantial heat; but with proper management, upward of four thousand plants may be raised from an ounce of seed. If these plants get the least chilled in the earlier stages of growth, they seldom recover; it is, therefore, important that the frame allotted for them be placed over a well-regulated hot-bed, and partitioned off, so that the sash can be kept down over the plants in cool weather.

Some gardeners raise Egg-plants in the same frame with Cabbage, and such other half-hardy plants as require air every mild day; by such management, one or the other must suffer for want of suitable aliment, *heat* being the principal food of tender plants, and *air* that of the more hardy species.

ENDIVE, OR SUCCORY.

CHICOREE DES JARDINS. *Cichorium endiva*, etc.

VARIETIES.

Green Curled.

White Curled.

Golden Yellow.

Broad-leaved, or Scarolle.

THE *Cichorium endiva* is a native of China and Japan, and is much used in salads and stews, and as a garnish for the table.

The proper kind of seed for early sowing is the Green Curled. A small quantity of this may be sown at different times in April and May, by those who would have it early. These crops will be very apt to run to seed; for this reason, it will be best to delay the sowing of seed for general crops until June, or July. If a small quantity of each esteemed variety be sown two or three times in these months, they will produce a plentiful supply for use in Autumn and the early part of Winter. One ounce of good Endive seed will produce about five thousand plants.

When the plants are three or four inches high, they should be transplanted into good ground, at the distance of a foot from each other, and immediately watered; or if they are set out in cloudy or wet weather, it will save this trouble. The plants will require to be hoed and attended to in the same manner as Lettuce, until grown to a moderate size, when they must be blanched. Select the large and full-hearted plants, and with bass or other strings, tie them a little above the middle, not too tight, previously gathering up the leaves regularly in the hand. This must be done when the leaves are very dry, otherwise the plants will rot. The *Cichorium intybus* grows spontaneously in many parts of Europe and America. In France it is much cultivated; the tops of the plants are considered profitable for cattle, and the roots are taken up in Autumn, and dried. The aromatic and volatile qualities of coffee are, by the combination of this root, rendered more mellow and full upon the palate, and its fragrance greatly increased, producing an agreeable tonic, and most exhilarating beverage.

Sow the seed in April in drills half an inch deep, and about eighteen inches apart; thin out the plants to six or eight inches in the row. The plant produces beautiful blue flowers, and is worthy of a place in the flower garden. The roots when dried, roasted as coffee, and ground, may be mixed in the proportion of two ounces of the powder to a pound of coffee.

HORSE-RADISH.

RAIFORT. *Cochlearia armoracia.*

THIS plant is propagated by cuttings from the root, either cut from the top about two inches long, or by offsets, or otherwise useless parts, from the sides of the main root, retaining the crowns or top shoots in as many parts as possible. These should be planted as early in the spring as practicable, in rows two feet apart, and six or eight inches from each other in the rows.

Select for the bed a good depth of soil, and such as will retain moisture, manure it with well-rotted dung, plough or dig it deep, and with a drilling machine or other convenient implement, draw drills a foot apart; then plant with a dibble, cuttings as above described, in every alternate drill, from two to three inches deep. The intermediate drills may be planted with Beet or Carrot seed, or that of any other root, but Turnip Beets are the most suitable to cultivate between the rows, as they will grow quick, and can be pulled out without disturbing the Horse-radish.

The Beets must of course be thinned out while young, and kept cultivated by hoeing between the rows, which will also benefit the Horse-radish. After the Beets are pulled, hoe the ground again, and keep it clear of weeds, by which method the bed may be cleared every year.

Some cultivate Horse-radish in a permanent bed, in which case, if, in taking up the roots, some offsets be left in the ground, they will produce a successive supply for future years.

INDIAN CORN.

MAIS. *Zea mayz.*

VARIETIES.

Early Dutton.
 Early Tuscarora.
 Early Canadian.
 Sweet, or Sugar.

Cobbet's Early Normandy.
 Southern Horsetooth.
 Early Golden Sioux.
 Mottled and Curious Pearl.

THE different varieties of early Corn intended for boiling when young, or others as curiosities, may be planted in the garden the last week in April, or early in May, in hills four feet apart, or in drills. If some of each esteemed variety be planted in separate beds at the same time, they will come in for the table one after the other in regular succession. After this, if any particular variety be preferred, it may be planted at different times in the month of May and June. If the ground be poor, mix a shovelful of old manure with the earth in each hill before the seed are planted, and after the plants are up strong, scatter a tea-cup full of wood ashes around each hill. This, with attentive hoeing and hilling, will cause it to produce ears early. Deep digging or ploughing between the hills is very beneficial when the corn is about eighteen inches high.

JERUSALEM ARTICHOKE.

POMME DE TERRE. *Helianthus tuberosom.*

THIS plant is a native of America. The tubers of the root, which are generally abundant, were, before Potatoes became improved by cultivation, in great esteem, and are yet considered a fine flavoured and nutritious food, when boiled and mashed with butter. They may be easily propagated by cutting the roots into sets, with two eyes in each, and planting them in the same manner as Potatoes, in March and April. To have them in perfection, they should be hoed

frequently, and the ground kept loose around them. In digging them for use, care should be taken to gather them out clean, as the least particle left will grow the year following, and encumber the ground, without producing a crop worth standing.

LEEK.

POIRREAU. *Allium porrum.*

VARIETIES.

Scotch, or Flag.

|

Large London.

THIS is a wholesome and useful herb, and is so hardy as to endure the extremes of heat and cold without injury. The seed may be sown in March, or early in April, in a bed of rich earth, in drills about an inch deep, and a sufficient distance apart to admit of a small hoe being worked between the rows, allowing one ounce of seed for every three thousand plants that may be required.

If the ground be kept loose and clean around the plants, they will be fit to transplant in June, or early in July, and should be set out in good ground, in rows twelve inches asunder, and the plants five or six inches apart in the rows. They will grow well in a warm border, which at this season is useless for many kinds of vegetables. After the plants have taken root, they should be frequently hoed, and kept free from weeds.

Those who wish to have Leeks blanched, may plant them in trenches three or four inches deep, and as the plants increase in growth, the earth should be drawn by a hoe into the trenches.

LETTUCE.

LAI TUE. *Lactuca sativa crispa.*

VARIETIES.

Large Green Head.	} These are hardy kinds.	Early Silesia.
Dutch, or Cabbage.		Imperial, or Sugar Loaf.
Tennis Ball, or Rose.		Pale Green, or Butter.
Madeira, or Passion.		Grand Admiral.
Large Green Curled.		Large Summer Silesia.
Loco Foco.		Paris Loaf Coss.

It would be easy to furnish a more extensive catalogue of Lettuce, as the varieties are numerous ; but as this is one of those kinds of vegetables that can only be raised in perfection during mild and temperate weather, it is needless for the gardener to plant any in the open ground, but such as have been tested, and found to stand a tolerable degree of warm weather, which generally prevails in May and June, and consequently cuts short the salad season. Those who have been accustomed to raise head Lettuce in any quantity, know the trouble of preparing the ground and planting, and the loss they would sustain if several thousand plants should run to seed just as they appeared to be perfecting for market. As this is often the case, even with the very best attention, I would caution gardeners to test such plants as they are not acquainted with, before they set out any quantity with a view to their heading.*

The six varieties inserted in the first column of our cata-

* It may be necessary here to remind the gardener, that moisture is the most essential nutriment of Lettuce, and that the very best varieties may run to seed without forming heads, in the event of extreme warm weather. Those who put off the sowing of seed until May and June, instead of sowing it in March and April, as directed, may procure head Lettuce from some of their strongest plants, by transplanting them into rich ground as soon as they are an inch or two in height, and the remainder, if left thin in the beds, may produce small heads, by stirring the earth around them with a small hoe, or weeding hook ; these are as good for family use as larger heads, and those persons who are fond of Lettuce may raise such throughout the summer ; but market gardeners seldom attempt it, unless they have a tract of moist, loamy soil, peculiarly adapted to the growth of head Lettuce, in any thing like a propitious season.

logue have been known to stand our winters, and may be sown from the first to the middle of September, in rich ground, free from weeds; they answer very well when sown with Spinach, and should be covered with straw at the approach of severe weather. These plants, if transplanted into warm borders, or in the open ground, as early in March as the weather will permit, will produce fine heads early in the month of May.

The best of the tender kinds of Lettuce should be sown in moderate hot-beds early in March, and if transplanted into good ground by the middle of April, will produce their heads before the approach of warm weather. Such kinds as are known to produce heads in hot weather, and also such as are intended to be cut as a small salad while young, may be sown in warm borders in March and April; but those designed for heading should be transplanted as soon as they are an inch or two in height, and kept in a growing state by frequent hoeing, or they may run up to seed as the season advances.

If it be an object with the gardener to have good strong Lettuce plants for transplanting, the seed should be sown very thin. One ounce of good seed is sufficient for a border of six feet in width by eighteen feet in length, and will produce from ten to twelve thousand plants.

All kinds of Lettuce intended for heading should be planted in good ground, twelve inches distant from each other every way; the plants should be carefully hoed every other week during their growth; the first hoeing should be done in about two weeks after they are transplanted.

The Coss Lettuce requires to be blanched; this is done by gathering up the leaves of the plants and tying bass round them, when grown to perfection.

If Head Lettuce be required at other seasons than the spring, it may be obtained in autumn by sowing seed in August, or in the winter by means of garden frames and glazed sashes. [*See article on Forcing Vegetables.*]

MELON.

MELON. *Cucumis melo.*

VARIETIES.

Green-fleshed Citron.
Murray's Pineapple.
Green-fleshed Persian.
Green-fleshed Nutmeg.

Large Yellow Canteleupe.
Pomegranate, or Musk Scented.
Skillman's Fine Netted.
Snake, (curious.)

THE Melon is an exotic plant, growing wild in Asia. It is cultivated in all the warm countries of Europe, and also in Africa and America, where its salubrious and cooling fruit is generally esteemed.

For the varieties of the Musk or Canteleupe Melons, prepare a piece of rich ground early in May; manure it and give it a good digging; then mark it out into squares of six feet every way; at the angle of each square, dig a hole twelve inches deep and eighteen over, into which put about six inches deep of old rotten dung; throw thereon about four inches of earth, and mix the dung and earth well with the spade; after which draw more earth over the mixture, so as to form a circular hill about a foot broad at top. (For a definition of the term "hill," see article Cucumber.) When your hills are all prepared, plant in each, toward the centre, six or eight grains of seed, distant two inches from each other, and cover them about half an inch deep. One ounce of good Melon seed will plant about one hundred and twenty hills.

When the plants are in a state of forwardness, producing their rough leaves, they must be thinned to two or three in each hill; draw earth from time to time round the hills, and about the roots of the plants. As soon as the plants have spread into branches, stop them by pinching off the top of the first runner bud; this will strengthen the plants, and promote their perfecting the fruit early; after which keep the ground perfectly free from weeds by frequent hoeing.

There are many varieties of the Melon, highly esteemed

in Europe, which do not succeed in this country; the gardener should, therefore, plant only such as have been tested and found to produce good fruit here, or our superior old sorts may become degenerate. After a judicious selection is made, if caution be not used to plant the different sorts remote from each other, and from Cucumbers, Squashes, and Gourds, degeneracy will infallibly be the consequence. To prevent the ravages of flies, &c., see General Remarks, pages 19 and 20.

WATER MELON.

MELON D'EAU. *Cucurbita citrullus*.

VARIETIES.

New Jersey.
Carolina.

Goodwin's Imperial.
Citron, for preserves.

THE Water Melon, though by some considered a species of the former, is a distinct genus of exotic plants. They afford a very refreshing article of luxury in our warm summers. Dr. Pallas, in the account of his journey to the southern provinces of Russia, in 1793 and '94, speaking of a colony of Moravians in Sarepta, or Sapa, on the River Volga, says, "The ingenious inhabitants of this town brew a kind of beer from their very abundant and cheap Water Melons, with the addition of Hops; they also prepare a conserve or marmalade from this fruit, which is a good substitute for syrup or treacle."

In order to have Water Melons in perfection, you must fix upon a piece of very rich light soil; prepare, plant and manage it in every respect as is directed for Musk Melon, only, let the hills be seven or eight feet distant every way. One ounce of seed will plant from forty to fifty hills.

MUSTARD.

MOUTARDE. *Sinapis.*

VARIETIES.

White.

|

Black.

THE *Alba*, or White Mustard, grows spontaneously in the fields of England; it is also cultivated as a small salad, as well as for seed. The seed yields from every hundred pounds, from thirty-three to thirty-six pounds of sweet mild oil.

White Mustard Seed is much used as a medicine, and persons subject to disordered stomachs often derive great benefit by taking a spoonful of the dry seed, two or three times a day. Some use it in pickles, to which it imparts an agreeable flavour, and renders Cucumbers in particular more salutary.

The *Nigra* or Common Mustard, is also a native of England.

The condiment called Mustard, and in daily use at our table is prepared from the seed of this species.

The seed, of each variety, may be sown in clean rich ground in April and May; and for a fall salad in September in shallow drills.

NASTURTIIUM, OR STURTION.

CAPUCINE. *Tropæolum.*

THIS is an annual plant, a native of Peru, and is highly deserving of cultivation for the sake of its brilliant orange and crimson coloured flower, as well as for the berries, which, if gathered while green and pickled in vinegar, make a good substitute for capers, and are used in melted butter, with boiled mutton, &c.

The seed should be sown in April, or early in May, in drills about an inch deep, near fences or pales; or trellises should be constructed, on which they can climb and have support, for they will always be more productive in this way than when suffered to trail on the ground.

OKRA.

GOMBO. *Hibiscus esculentus*.

THE green capsules of this plant are used in soups, stews, &c., to which they impart a rich flavour, and are considered nutritious. Its ripe seed, if burned and ground like coffee, can scarcely be distinguished therefrom.

The seed should be planted in good rich ground, the first or second week in May, if settled warm weather, but not otherwise, as it is a very tender vegetable. Draw drills about an inch deep, and three or four feet asunder, into which drop the seed at the distance of six or eight inches from each other, or rather drop two or three in each place, lest the one should not grow and cover them nearly an inch deep. As the plants advance in growth, thin them out, earth them up two or three times, and they will produce abundantly.

 ONION.
OIGNON. *Allium cepa, etc. etc.*

VARIETIES.

New England White.	Yellow Dutch.
Large Red.	Strasburgh, or Flanders.
Yellow, or Silver Skinned.	Madeira.

OF the several varieties of Onions, the Yellow or Silver Skinned, and Large Red, are the best for a general crop. The bulbs are handsome, of firm growth, and keep well through the winter. The New England White are handsome for the table, and very suitable for pickling, as well as to pull while young, and generally prove a very profitable crop.

Previous to sowing Onion seed for a general crop, the ground should be well prepared by digging in some of the oldest and strongest manure that can be got. The earlier this be done in the spring, the better, and the planting should

not be delayed longer than the middle of April. The seed may be sown moderately thick, in drills one inch deep and twelve inches apart.*

Those who cultivate Onions for the sake of their bulbs, may use at the rate of four or five pounds of seed per acre.

As market gardeners, in the vicinity of large cities, find it most profitable to pull a great proportion of their Onions while young, they generally require at the rate of from eight to ten pounds of seed to an acre of land.

When the plants are up strong, they should be hoed. Those beds that are to stand for ripening, should be thinned out while young, to the distance of two or three inches from each other. If a few should be required for use after this, those can be taken which incline more to tops than roots; and if the beds be frequently looked over, and the small and stalky plants taken away where they stand thickest, the remaining bulbs will grow to a larger size. The plants should be hoed at least three times in the early part of their growth; but if the season prove damp, and weeds vegetate luxuriantly, they must be removed by the hand, because after the Onions have begun to bulb, it would injure them to stir them with a hoe.

When the greenness is gone out of the tops of Onions, it is time to take them up; for from this time the fibrous roots decay. After they are pulled, they should be laid out to dry, and when dry, removed to a place of shelter.

The small Onions may be planted in the following spring. Even an Onion which is partly rotten will produce good bulbs, if the seed stems be taken off as soon as they appear.

* Onion seed may be sown at any time from March to September, but those only can be depended upon for ripening, which are sown in the first and second spring months. It is a singular fact, that Onions will not ripen later than August or the early part of September, however warm the weather may be; they can, however, be preserved in the place where they grow, by spreading some short dung over them in autumn, just sufficient to prevent their purging out of the ground in winter. Onions thus preserved, often prove more profitable to market gardeners in the spring, than crops which ripen; because ripe Onions are then scarce, and green ones prove a good substitute for Shallots, Welsh Onions, Leeks, &c.

The *Allium fistulosum*, or Welsh Onion, is cultivated for spring salad; it forms no bulbs, but is very hardy. If the seed be sown early in September in rich ground, although the tops may die down in the winter, yet the roots will continue sound, and put up new leaves early in the spring.

The *Allium cepa*, or common White and Red Onions, are most generally cultivated by market gardeners as a substitute for the *Allium fistulosum*; they sow the seed in the spring and autumn months, the product of which is pulled and sent to the market while young, and generally meets with a ready sale.

The *Allium proliferum*, or Tree Onion, is propagated by planting the bulbs in spring or autumn, either the root bulbs, or those produced on the top of the stalks; the latter, if planted in the spring, will produce fine Onions. These may be planted in rows with a dibble, the same as Shallots.

The Potato Onion, *Allium tuberosum*, does not produce seed as other Onions, but it increases by the root. One single Onion, slightly covered, will produce six or seven in a clump, partly under ground.

The bulbs are generally planted in the spring, from twelve to eighteen inches apart, but they will yield better when planted in autumn, as they will survive the winter if slightly covered with dung, litter, or leaves of trees, &c.

PARSLEY.

PERSIL. *Apium petroselinum*.

VARIETIES.

Dwarf Curled.
Extra Curled.

|

Single, or Common.
Large Rooted Hamburg.

PARSLEY is a hardy biennial plant, and grows wild in moist climates, but has been greatly improved by cultivation. The leaves of the Common Parsley are used as a pot herb, and

those of the Extra Curled kinds make a fine garnish. The Large Rooted are generally cooked for the table in autumn and winter, like Parsnips.

As Parsley seed, sown late in the season, is apt to lay in the ground some time before it vegetates, and often fails in dry weather, the general crop should be sown in a cool situation by the early part of April, in drills an inch deep, and one foot asunder, allowing at the rate of about six or seven pounds of seed to the acre, or two ounces for every three perches of land.*

After the plants are up, let them be kept clean by frequent hoeing. The Large Rooted Parsley should be thinned out while young, and managed the same as Carrots and Parsnips.

In order to have Parsley green through the winter, the old leaves should be picked off in September. If some of the roots be taken up early in November, and laid in a frame, or light cellar, the leaves will keep green a long time; the remainder may be covered up with straw in the place where it grows.

If Parsley seed be sown in frames in spring or summer, it may be preserved for winter use without the trouble of removing it.

* It frequently happens that Parsley seed will remain in the ground three or four weeks, without showing any signs of vegetation, and in the event of extreme dry weather, is apt to decay for want of its most essential aliment—moisture. A few grains of Long Radish seed, sown about an inch apart in each drill, are well adapted to promote the growth of Parsley; because Radish seed being quick in germinating, will open the pores of the earth; and the plants, as they progress in growth, will create a shade, sufficient to protect the Parsley from the full rays of the sun.

PARSNIP.

PANAIS. *Pastinaca sativa*.

VARIETIES.

Long Guernsey Cup.

|

Large Dutch, or Common.

THIS is a hardy biennial plant, common in calcareous soils; it has long been an inmate of the garden, and forms a vegetable dish in the winter, with salt meat, salted fish, &c.

Parsnip seed may be planted from the middle of March till the middle of May, in drills one inch deep and fourteen inches apart; and as this vegetable requires a long season to grow in, the sooner the seed is planted the better. Parsnips grow best in a deep soil, which has been well manured the preceding fall. Sow the seed thick along the drills, at the rate of five or six pounds per acre, and rake them in evenly.*

When the plants are two or three inches high, thin them to the distance of six or eight inches in the rows. They should be kept free from weeds, by regular hoeing through the summer, and in autumn they will be fit for use; but they improve in flavour after having been frozen, and will endure the severity of a hard winter. See Calendar for November.

Parsnips require from thirty to forty minutes boiling, according to their size and age. Some boil them in water seasoned with salt, until tender; but they are better when boiled with salt pork, and afterward mashed and fried in butter.

* The Parsnip, although when in full growth it will endure the extremes of heat and cold, requires peculiar management to promote and preserve germination in an early stage of culture. In order to give the seed a fair chance, it should be planted in ground susceptible of moisture, and not apt to encrust when dry. The seed should be dropped thick along the drills, and well covered, as single or solitary plants are apt to perish, from not having sufficient strength to open the pores of the earth, and in the event of drought such plants die off prematurely. If cultivated in light ground, it should be rolled or pressed immediately after depositing the seed therein, but this should not be done while the earth is wet. A few grains of Long Radish seed, sown in each drill as directed for Parsley, will also prove beneficial to Parsnips.

PEPPER.

POIVRE OU PIMENT. *Capsicum*.

VARIETIES.

Grossum, or Bell Pepper.		Long Red, or Bird's Bill.
Tomato-shaped, or Squash.		Cherry, or West Indian.
Sweet Spanish; used as a salad, has a very delicate taste.		

THIS family of plants are natives of the East and West Indies; some of their capsules, or pods, are yellow, and others red, when at maturity: they are much used for pickling, and should be gathered for that purpose before they are fully ripe.

The seed of the different kinds of *Capsicums* may be sown in a hot-bed in March, or on a warm border, early in May. One ounce of seed will produce about three thousand plants. When the plants arrive at the height of from one to two inches, they should be transplanted into good rich ground, from eighteen inches to two feet distant from each other.

Those who do not want Peppers early in the season, may sow seed in the open ground in May, in drills two feet asunder, and half an inch deep. When the plants are grown an inch or two high, thin them to the distance of fifteen or eighteen inches in the rows. The ground should be afterward hoed deep round the plants, and kept free from weeds by repeated hoeings.

The *Capsicum Grossum*, or Bell Pepper, is perennial, and will keep in perpetual bearing in warm climates. In England this species is considered superior to all others, on account of its skin being thick, and also pulpy and tender; the plants are therefore frequently preserved in hot-houses during the winter and spring, and kept in the open air in settled warm weather.

PEA.

Pois. *Pisum sativum*.

VARIETIES.

Early Cedo Nulli, or Race Horse, 3 ft.	Groom's Dwarf Blue Prolific, 4 ft.
Early Frame, 2 to 3 feet.	Dwarf Blue, Prussian, 2 to 3 feet.
Early Warwick, 3 feet.	Dwarf Marrowfat, 3 to 4 feet.
Early Washington, 3 feet.	Ladies' Finger Marrows, 4 feet.
Early Charlton, 3 feet.	Matchless Marrowfat, 6 feet.
Double Blossom Frame, 3 feet.	Knight's Tall Marrow, 6 feet.
Bishop's Early Dwarf, 2 feet.	Knight's Dwarf Marrow, 3 feet.
Dwarf Prolific, or Strawberry, 2 feet.	Woodford's Green Prolific, 6 feet.
Dwarf Spanish, or Fan, 1 to 2 feet.	Large Grey Rouncival, 4 feet.
Early Nimble Dick, 3 feet.	Dwarf Sugar, (eatable pods,) 3 feet.
Dwarf Blue Imperial, 2 to 3 feet.	Tall Crooked Pod Sugar, 6 feet.
Waterloo Blue, 4 feet.	French Bouquet, or Sugar, 3 to 4 ft

Albany Field, in varieties.

THE above list and description of the most esteemed kinds of Pea are taken from the catalogue of Mr. G. C. Thorburn. If they are rightly described, they will grow to different heights, according to soil and season. This description, however, may serve as a guide for the gardener in planting. The Dwarf Pea require less distance between row and row, and shorter sticks than the tall kinds.

Planting the early kinds of Pea should commence as soon in the spring as the ground can be brought into good condition; all the other sorts, as well as the early, will answer for successive crops; to obtain which, a few of the most esteemed varieties should be planted at the same time every two weeks, from March until the end of May. Persons desirous of having Peas throughout the summer and autumn, may plant a few in June, July, and August. In dry weather the Peas should be soaked in soft water five or six hours before planting, and if the ground be very dry, it should be watered in the drills.

Gardeners practice different modes of planting Peas. Some plant them in ridges, others in drills, some in single rows, others in double; some use sticks for the dwarf kinds, and others not; those who study neatness should, however,

have them all rodded, though the most dwarfish may do without.

All the different sorts of Pea may be planted in double or single rows, from four to six feet apart, according to the different heights they may be expected to grow. If two drills be made three inches deep, and about nine inches apart, and the seed dropped along each drill moderately thick, they will yield better than single rows, and will save sticks. When the plants are two or three inches high, let them be hoed, drawing, at the same time, a little earth up to their stems; when they get to double that height, let them be hoed again; at the same time, place a row of sticks in the middle of your double rows, and a few shorter and smaller ones on the outside of each row, to assist the Peas in climbing to their main support. You must be governed as to the length of your sticks by the description of your Peas. There is great advantage in having sticks of a suitable height to the various kinds of Peas; the sticks should not only be sufficiently tall, but also branchy, that the plants may readily take hold; and they should be prepared fan fashion, so that the side branches may extend only along the rows. As the plants progress in growth, let them be repeatedly hoed and earthed up; this will promote a plentiful bearing.

One quart of Peas will plant from one hundred and fifty to two hundred feet of row, allowing the largest kinds to average one inch apart, and the smallest, two peas to the inch. If cultivated on the field system, one bushel will plant an acre of land, and produce about a hundred bushels of green Peas.

To have green Peas in perfection, they should be gathered while young, and cooked immediately after they are shelled, or they will soon lose their colour and sweetness. Let the water be slightly seasoned with salt, and boiled; then put in the Peas with a small bunch of Spear Mint, and ease the cover so as to let off the steam; they require about fifteen minutes boiling, or five minutes more or less, according to

the age and care bestowed. Taste and try in time, so as to have them done to a nicety.

The Sugar Peas have no inner tough film, or skin, to the pods, like the common sorts; they should therefore be boiled without shelling, and served up the same as Kidney Beans.

POTATO.

POMME DE TERRE. *Solanum Tuberosum.*

THE Potato is known to be a native of the southern parts of America, but has been greatly improved by cultivation.

The varieties being very numerous, it is unnecessary for me to point out any particular kinds; some of the earliest should, however, be planted first in the spring, to produce young Potatoes in due season; but they are not so suitable for a full crop as the late varieties.

Potatoes being of such extensive utility, various expedients have been contrived with a view to find out the best method of preparing the seed. In many parts of England, (where Potatoes equal to any in the world are raised,) the farmers seldom plant them whole; they take the Potatoes as they come to hand, and in cutting them, take care to have two good eyes in each set; the small Potatoes are deprived of the sprout or nose end, as it is generally considered that a redundancy of eyes exhausts the set, and produces weak plants, which are not calculated to yield a full crop. I have frequently known from five to six hundred bushels raised from an acre with small Potatoes alone cut in this way. Some prefer planting the sets immediately after they are cut; the better way is to get them cut a week before the time of planting, and to lay them out on a barn, or garret floor, to dry.

It will require from twelve to sixteen bushels of Potatoes to plant an acre of ground, according to the size and nature

of the seed roots, the manner of preparing, and mode of planting the same.

Potatoes may be planted from the first week in April until July, either in hills or drills; the best way for a garden is to plant them in drills four or five inches deep, and about thirty inches asunder; the sets may be dropped six or eight inches apart; and if a small quantity of combmaker's horn shavings or sea weed be used as a manure for the early kinds, it will expedite their growth; the ground should be hoed as soon as the plants come up, and as they progress in growth it will be proper to mould or earth them up twice.

POTATO, (Sweet.)

POMME DE TERRE DOUCE. *Convolvulus batatus.*

SWEET Potatoes are grown to great perfection in the Southern States, and may be raised in the vicinity of New-York, by means of a moderate hot-bed, in which they should be planted whole, early in April, three or four inches deep, and about the same distance apart. In about a month they will throw up sprouts. When these are three inches above ground, part them off from the Potato, which, if suffered to remain, will produce more sprouts for a successive planting; transplant them into rich light soil, in rows four feet apart, and the plants about a foot apart in the rows, or in hills four feet apart. Keep them clear of weeds until the vines begin to cover the ground, after which they will grow freely. In sandy ground, it is well to put a shovelful of rotten manure to each plant.

A moderate hot-bed, five feet square, put down early in the month of April, with half a peck of good sound Sweet Potatoes placed therein, will produce a succession of sprouts in May and June, which if planted and managed as directed, will yield about fifteen bushels of good roots.

PUMPKIN.

CITROUILLE OU POTIRON. *Cucurbita pepo.*

VARIETIES.

Finest Cheese, or Family.
Mammoth, or Spanish.

Connecticut Field.
White-Bell.

THIS plant is highly deserving of cultivation, particularly in new settlements; the large sorts are profitable for cattle, as some of the mammoth tribe have been known to weigh upward of two hundred pounds each; the other kinds are also very productive, and may be raised on any waste land, provided it will admit of digging small spots, of the dimensions of one or two feet, every ten or twelve feet, for the hills, and the residue of the ground be unencumbered for the plants to run on. They are generally raised, on cultivated farms, between hills of Indian Corn, and may be planted in the garden or open field, in May and June, in hills eight or ten feet apart, with three or four seed in each hill.

One quart of Field Pumpkin seed will plant from five to six hundred hills. An ounce of the finer kinds will plant from fifty to eighty hills.

Pumpkins are not so tenacious of a particular soil as either Melons or Cucumbers, but in other respects are cultivated in the same manner, only that in raising them on a large scale the ground may be prepared with a plough, and afterward, as the weeds advance, the plough and harrow may be used between the plants until they begin to run, which will save much labour.

The finest quality of Pumpkins are known to make good pies, and may also, after being boiled, be worked up with wheaten flour into bread, for which purpose they are fully equal to Indian meal. The knowledge of this fact may prove advantageous to farmers living at a distance from cities, as they may find a market for their grain or meal readier than for their Pumpkins.

RADISH.

RADIS OU RAVE. *Raphanus sativus.*

VARIETIES.

Long Scarlet.	Long White Naples.
Long Purple.	Purple Turnip.
Scarlet Pear-shape.	Yellow Turnip.
Scarlet Turnip.	White Spanish.
White Turnip-rooted.	Black Spanish.

THE different varieties of Radish are extensively cultivated near large cities, chiefly for their roots, which are considered a luxury after a hard winter, and prove acceptable as warm weather approaches, provided they can be obtained in perfection. The plant is also cultivated for the sake of the seed leaves, which are used as a small salad; and even the seed pods, if pickled while young and green, are considered by some a good substitute for Capers.

Those who may be desirous of having good Radishes early in the spring, should have a warm border prepared in the very best manner, so as to be ready to sow some of the Short Top Scarlet by the middle of March. If the ground should not be in good condition to receive the seed at this time, let it be delayed a few days; and by the first of April, have another bed prepared in the open ground, by digging in some good strong manure. The seed may be sown broadcast, and raked in evenly, or in drills drawn about one inch deep, and a foot apart.*

If you wish to have Radishes in regular succession, sow seed of the most esteemed varieties every two weeks, until the middle of May: if any be sown after this, it should be the kinds described in the second column of our Catalogue.

* In the seasons for planting Carrot, Parsnip, Parsley, Leek, Celery, and such other seed as are tardy in germinating, a few grains of Radish seed dropped in each drill will produce good roots, and this crop will prove beneficial to those above enumerated, because the rows can be traced by the Radishes, which being of quick growth, may be pulled by the time the other plants are in full leaf.

These will endure the heat better than the others, and may be sown in drills, in small quantities, throughout the summer, until the latter end of August, when all the varieties may be sown in regular succession till the first of October. Market gardeners may prepare the ground with a plough, and cover such seed as may be sown broad-cast with a harrow.

For early spring crops, the seed may be sown broad-cast, at the rate of from twelve to fourteen pounds to the acre, and about half that quantity will be sufficient, in drills drawn a foot apart. Of the large late kinds, five pounds to the acre will be enough, if sown regularly in drills, as directed.

It may be necessary here to remind the gardener of the necessity of sowing tobacco dust, soot, ashes, &c., over his seed beds, in hot, dry weather, or he will find it difficult to raise Radishes in unpropitious seasons. [*See article Turnip, also page 19 of the General Remarks.*]

ROCAMBOLE.

AIL D'ESPAGNE. *Allium scorodoprassum.*

THIS and the *Allium sativum*, or common Garlic, are raised in some gardens. Many people consider the Rocambole to be of a milder and better flavour than Garlic, but the bulbs are not so large.

The plants are very hardy, and will grow in almost any soil or situation. They may be propagated either by the roots or seed; the former ought to be separated and planted at the same time, and in the same manner, as Shallots.

If raised from seed, they may be sown in drills, either shortly after the seed is ripe, or in the succeeding spring; they require only to be kept clear of weeds, and in the following autumn may be taken up, the bulbs parted, and planted as before.

RHUBARB.

RHUBARBE. *Rheum.*

RHUBARB is a genus of exotic plants, comprising seven species, of which the following are the principal :

1. *Rhaponticum*, or Common Rhubarb, a native of Thrace and Syria, has long been cultivated in British gardens for the footsalks of the leaves, which are frequently used in pies and tarts.

2. *Rheum undulatum* is also cultivated for the same use.

3. The *Palmatum*, or true Officinale Rhubarb, is a native of China and the East Indies, whence its culture has been introduced into Europe : it produces a thick, fleshy root, externally yellowish brown, but internally of a bright yellow colour, streaked with red veins. It grows to great perfection in Scotland, as far north as Perthshire, (lat. 56,) and in England, Turkey, and various other parts of Europe. When the importance of this root as a medicine is considered, it is a matter of astonishment that it has not been more generally introduced into the United States.

The several kinds of Rhubarb may be propagated by offsets taken from the roots early in the spring, or from seed sown late in autumn, or in March and April, in drills one inch deep and a foot apart. The indispensable points to the production of good roots of the *Palmatum*, are depth and richness of soil, which should be well pulverized before the plants are set out. Prepare beds of fine mould eighteen inches deep ; in these put in the plants from the seed-bed, ten or twelve inches apart ; this must be done when they have attained the height of four or five inches, and have thrown out as many leaves.

The first season is the most critical, and much care is necessary. If the weather be hot, the nursery must be shaded, and at all events frequently watered ; for water, though hurtful to old plants, is now of the first importance. Wet weather is the most proper time in which to plant. The

beds must be kept free from weeds during the summer, and on the approach of severe weather, covered up with light litter. In the early part of spring, this must be taken off, and in the beginning of April the plants must be transplanted into ground dug and prepared as directed for Asparagus.

Those who cultivate the *Palmatum* for the sake of the roots, should dig the ground two or three spades deep, and place the plants three feet apart every way. As to the other varieties, it is not so particular, only the plants must have room in which to grow. In the early part of November, the leaves being then decayed, the beds should be covered with dry litter; before this is done, a little earth should be drawn round the crowns of the plants. If there be any danger of water lodging, make trenches to carry it off. In the month of March, the beds should be stripped of their covering, and the ground well hoed and cleared of weeds.

The roots of the *Palmatum* must not be taken up until six or seven years old. The stalks of the other kinds may be cut every spring, as soon as the leaves are expanded.

If Rhubarb stalks be required for use early in the spring, they may be obtained by placing flour barrels or deep tubs over some of the plants, and covering them up with fresh stable dung, or by any of the methods pointed out in the article under the head of Forcing Végétables.

The stalks of this plant are used for pies and tarts. After being stripped of the skin, or outer covering, and divested of the small fibres, or stringiness to which the plant is liable, in an advanced stage of growth, the stalks should be cut transversely into very small pieces, and then parboiled with sugar, and such spices as best suit the palate. Rhubarb will keep this way the same as other preserves, and may be used not only in pies and tarts, but it makes an excellent pudding, which is done by flattening a suety crust with a rolling-pin, then spreading on the fruit, rolling it up in an oval shape, and boiling it in a cloth. Prepared in this way, the fruit retains its virtues, and the pudding may be served up hot, in

slices of from half an inch to an inch thick, with butter and sugar spread between the layers.

Some boil the stalks to a juice, which being strained through a colander, will keep for years, if well spiced and seasoned with sugar.

In England, large drying houses have been erected for the purpose of curing the roots of the *Palmatum*; but this business may be done in this country as it is done in China: by the heat of the sun. After the roots have been well washed, and the small fibres cut off, they are to be cut transversely into pieces about two inches thick, and dried on boards, turning them several times a day, in order to prevent the escape of the yellow juice, on which its medicinal qualities depend. In four or five days they may be strung upon strings, and suspended in a shady but airy and dry situation, and in two months afterward they will be fit for the market.

SALSIFY.

SALSIFIS OU CERCIFIS. *Tragopogon porrifolius*.

THIS plant grows spontaneously in the open fields of England, and is by some highly valued for its white edible root, and for the young shoots rising in the spring from plants a year old; these, when gathered while green and tender, are good to boil and eat in the same manner as Asparagus. Some have carried their fondness for this plant so far as to call it Vegetable Oyster. It requires the same kind of soil and management as Carrots and Parsnips.

The seed may be sown at any time in April and May, an inch deep, in drills twelve inches apart. When the plants are two or three inches high, they should be thinned to the distance of six inches from each other, and afterward hoed. The ground should be kept clean and loose round the plants, by repeated hoeing; in the autumn they will be fit for use. The roots

may be taken up late in autumn, and secured in moist sand from the air; or suffered to remain out, and dug up when wanted.

As the seed of Salsify do not all ripen uniformly, it should be sown moderately thick. To insure a regular crop, five or six pounds may be allowed for an acre of ground, or two ounces for every three perches.

The mode of cooking recommended by an American author is, "To cut the roots transversely into thin pieces; boil them in water, or milk and water; when boiled soft, mash them, and thicken the whole with flour to some degree of stiffness; then fry them in the fat of salt pork, or butter; they are a luxury."

In England the tops are considered excellent food when boiled tender, and served up with poached eggs and melted butter. They are by some considered salutary for persons inclined to consumption. Those afflicted with any symptoms indicating the approach of that complaint, cannot harm themselves by eating the tops, when they are to be got, which is in the month of April; and if the roots are eaten when attainable, they may, perhaps, answer a still better purpose, and even the liquor in which they are boiled may possess some of the most valuable properties of the plant.

SCORZONERA.

SCORSONERE. *Scorzonera Hispanica.*

THIS plant has long been raised in British gardens, for culinary purposes, and especially as an ingredient in soups, on account of its palatable and nourishing roots. Some boil and eat them like Carrots, &c.; in which case they should be deprived of their rind, and immersed in cold water for half an hour, or they will be bitter. They are raised precisely in the same manner as Salsify. If the seed be sown in

April, in a good deep soil, the roots will attain perfection in autumn, and continue good all the winter. They last from three to four years, according to the quality of the earth and the care bestowed upon them; but it is better to raise a few from seed every year.

SEA-KALE.

CHOU MARIN. *Crambe maritima.*

THIS plant is found on the sea-shore, in the southern parts of England, where it grows spontaneously. As soon as it appears above ground, the inhabitants remove the pebbles or sand with which it is usually covered, to the depth of several inches, and cut off the young and tender leaves and stalks, as yet unexpanded and in a blanched state, close to the crown of the root; it is then in its greatest perfection. When the leaves are full grown, they become hard and bitter, and the plant is not eatable.

It is cultivated in private gardens, and for sale, in various parts of England. Cultivators have differed widely respecting the mode of treating this plant; many conceiving that stones, gravel, and sea sand are essential to its growth, have gone to the expense of providing them; but it has been discovered that it will grow much more luxuriantly in a rich sandy loam, where the roots can penetrate to a great depth.

The seed of Sea-Kale may be sown in October, or as early in the spring as the ground can be brought into good condition, in drills an inch and a half deep, and fourteen or sixteen inches asunder; the plants should afterward be thinned out to the distance of six or eight inches from each other in the rows, and kept clear of weeds by frequent hoeing through the summer. When the plants are a year old, every third row may be taken up, and also every other plant in each row, leaving them fourteen or sixteen inches apart; these

may be transplanted into good ground prepared as directed for Asparagus. Plant two rows in each bed, about eighteen inches apart; the best way is to make two drills three inches deep, and with a dibble set in the plants fifteen or sixteen inches from each other; when these drills are filled, the crowns of the plants will be covered nearly two inches, but they will soon push through the earth. The plants left in the seed-bed may form a permanent bed, which should be forked or dug between the rows; previous to this being done, lay on an inch or two of good rotten manure, and incorporate it with the earth around the plants.

Some make new plantations of the old roots, which should be cut up into pieces of about two inches in length, and planted in March or April, three or four inches deep, at the distance before directed for the plants.

At the approach of winter the leaves will die away, and disappear. The beds should then be thickly covered with dung, leaves, or sea-weed; this will not only protect the plants from frost, but will cause them to shoot up early in the spring. As soon as the frost is out of the ground, this may be taken off, or, if well rotted, it may be mixed up with the earth; the crowns of the plants should then be covered to the depth of ten or twelve inches for blanching.

Some blanch it by heaping on it sea sand; some common sand and gravel; and others with large garden pots, inverted and placed immediately over the plants. If these pots be covered up with fresh horse dung, it will forward the shoots in growth, and make them sweeter and more tender.

When your plants have been covered in either method three or four weeks, examine them, and if you find that the stalks have shot up three or four inches, you may begin cutting; should you wait till all the shoots are of considerable length, your crop will come in too much at once, for in this plant there is not that successive growth which there is in Asparagus; you may continue cutting until you see the heads of flowers begin to form; and if at this time you uncover it

entirely, and let it proceed to that state in which Broccoli is usually cut, and use it as such, you will find it an excellent substitute ; and this greatly enhances the value of the plant ; as Broccoli does not stand our winter frosts, and can only be had when carefully protected, as recommended when treating of that vegetable ; but Sea-Kale is sufficiently hardy to bear our winter frosts, without much injury. You are not to weaken the roots too much by over-cutting, for in that case it would injure their next year's bearing : some of the shoots should be allowed to grow, to carry on a proper vegetation, and strengthen and enlarge the roots. Great care should be taken in cutting, not to injure the crowns of the roots by cutting the shoots too close to them. Sea-Kale should be dressed soon after it is cut, as the goodness of the article greatly depends on its not being long exposed to the air.

If you choose to force Sea-Kale, dig a trench all round a small bed, about three feet wide, and thirty inches deep ; fill it with hot dung, and as it sinks, raise it. This will make the plants grow ; and if hand lights are set over them, it will accelerate their growth.

To have this rare vegetable in perfection, it should be cooked as soon as gathered. Let it be first soaked in water, seasoned with salt, for half an hour ; then wash it in fresh water, and put it into the cooking utensil ; keep it boiling briskly, skim clean, and let off steam. When the stalks are tender, which may be expected in from fifteen to twenty-five minutes, according to size and age, take it up, dish it, and serve it up with melted butter, gravy, and such condiments as are most agreeable to the palate.

SKIRRET.

CHERVIS, OU GYROLE. *Sium sisarum*.

THIS plant is first cultivated by seed, and afterward by offsets taken from the old roots, and planted very early in the spring, before they begin to shoot; but it is best to raise a small bed from seed every year, as the roots grow longer than those raised from slips, and are less liable to be sticky. The seed may be sown in drills the latter part of March, or early in April, and managed the same as Salsify, Parsnip, &c. In autumn, when the leaves begin to decay, the roots are fit to use, and continue so till they begin to shoot in the spring.

Skirrets should be planted in a light, moist soil, for in dry land the roots are generally small, unless the season proves wet.

The root of the Skirret is composed of several fleshy tubers as large as a man's finger, and joined together at the top. They are eaten boiled, and stewed with butter, pepper, and salt, or rolled in flour and fried, or else cold, with oil and vinegar, being first boiled. They have much of the taste and flavour of a Parsnip, and are by some considered a great deal more palatable.

SHALLOT.

ECHALOTE. *Allium ascalonicum*.

THE true Shallot is a native of Palestine, and is considered to possess the most agreeable flavour of any of the *Allium* genus; it is consequently highly deserving of cultivation.

It is propagated by planting bulbs, or offsets, in the fall of the year, which may be set out with a dibble, in rows twelve inches apart, and from four to six inches distant in the rows; or they may be placed in drills, two or three inches deep, and covered up with a trowel or hoe.

The gardeners about New-York plant large quantities of the bulbs toward the end of August, and early in Septem-

ber ; by this means they are enabled to supply the market in April and May with a mild *Allium*, which while green meets a ready sale.

Those intended for seed may remain in the ground until June or July ; after the tops have decayed, the bulbs must be taken up, and the offsets divided : these should be kept in a dry place to plant the ensuing autumn.

It will require at least four bushels of bulbs, if measured when first taken from the ground, to plant a quarter of an acre ; because after they are trimmed and deprived of their seed stalks, the bulk will be reduced one half.

SPINACH, OR SPINAGE.

EPINARD. *Spinacia*.

VARIETIES.

Large Round-leaved.
Broad-leaved Savoy.

Holland, or Lamb's Quarter
New Zealand.

THE *Spinacia oleracea*, or common Spinach, is very hardy, and consequently a very important vegetable for cold climates. It merits attention from its being extremely wholesome and palatable, and from its keeping green even after having been cooked. It makes a delicious dish when served up with the gravy of roast meat, melted butter, &c.

As Spinach is the only vegetable that can be raised to advantage the latter end of the year, the gardener should, towards the end of August, prepare such ground as may have been occupied by summer crops, and by having it well manured for this crop, it will be in good condition for Beets, Carrots, Parsnips, Turnips, &c., the spring following.

If the ground be got ready, so as to have several beds sown in succession, from the first to the end of September, the most forward of these, if covered up with straw at the approach of cold weather, will furnish greens for the table when other vegetables are scarce, and the later crops will

recover the effects of a hard winter, and produce a wholesome vegetable early in the spring.

If Spinach seed be sown in rich ground in March and April, it will grow freely, but it must be cut before the approach of hot weather, or it will run to seed. To raise it in perfection at this season, it should be sown in drills about a foot apart, and be frequently hoed; this will keep it in a growing state, and, consequently, prevent its running up to seed as quick as it otherwise would.

It is altogether useless to sow Spinach seed in poor ground; let the ground be well manured with good strong dung, and it will well reward you for your trouble by its abundant produce.

If Spinach be cultivated in drills a foot apart, it will require from seven to eight pounds of seed to plant an acre of ground. Some gardeners use more than double that quantity in sowing broad-cast.

Be careful to pick Spinach exceedingly clean, and wash it in five or six waters previous to cooking it. Some cook Spinach in a steamer over boiling water, others boil it in water; but the best way is to put it into a saucepan that will just hold it, without water, then strew a little salt upon it, and cover it close. Put your saucepan on a clear quick fire; and when you find the Spinach shrunk and fallen to the bottom, and the juice which comes from it boil up, it is done. In order that it may be rendered capable of absorbing a moderate quantity of gravy, melted butter, &c., which are indispensable with green vegetables, let it be well drained in a sieve, or colander, before it is dished.

The New Zealand Spinach, or *Tetragona expansa*, is not much cultivated in this country; its nature seems to be opposite to the common Spinach, as it will endure the heat better than the cold. It may be obtained in the summer, by planting the seed in April and May. Being of luxuriant growth, it should be planted in hills three feet apart, and about two seed in a hill. The leaves will be fit for use during the summer, and until late in the autumn.

SQUASH.

GOURDE GIRAUMON OU POTIRON. *Cucurbita melopepa.*

VARIETIES.

Early Bush Scollop.		Vegetable Marrow.
Green Striped Bush.		Winter Crookneck.
Early Crookneck.		Lima Cocoanut.
Large Cushaw.		Acorn, or California.

THE several varieties of Squash are very useful in this and other warm climates, as they can be grown in perfection in the summer, and therefore prove a good substitute for Turnips, which cannot be raised in perfection in hot weather. They should be planted in May and June, in hills, prepared in the same manner as for Cucumbers and Melons, and their subsequent management is the same in every respect. The bush kinds should be planted three or four feet apart, and the running kinds from six to nine, according to their nature, as some will run more than others. It is always best to plant five or six seed in a hill, to guard against accidents; as when the plants are past danger, they can be thinned to two or three in a hill. One ounce of Squash seed will plant from fifty to a hundred hills, according to the sorts and size of the seed.

The fruit of the Early Summer Squash is generally gathered for use before the skin gets hard, and while it is so tender as to give way to a moderate pressure of the thumb nail. The Winter Squashes should be suffered to ripen, and collected together in October, in the manner recommended in the Calendar for that month.

All kinds of Squashes should, after having been boiled tender, be pressed as close as possible between two wooden trenchers, or by means of a slice or skimmer, made of the same material, until dry, and then prepared for the table in the same manner as Turnips.

TOMATO.

TOMATE, OU POMME D'AMOUR. *Solanum lycopersicum.*

VARIETIES.

Large Red.

Large Yellow.

Pear-shaped.

Cherry-shaped.

THE Tomato, or *Love Apple*, is much cultivated for its fruit, which is used in soups and sauces, to which it imparts an agreeable acid flavour; it is also stewed and dressed in various ways, and is considered very wholesome.

The seed should be sown early in March, in a slight hot-bed, and the plants set out in the open ground, if settled warm weather, in the early part of May. In private gardens it will be necessary to plant them near a fence, or to provide trellises for them to be trained to, in the manner recommended for Nasturtiums; they will, however, do very well, if planted four feet distant from each other every way.

Tomatoes may be brought to perfection late in the summer, by sowing the seed in the open ground the first week in May; these plants will be fit to transplant early in June, and the fruit may ripen in time for preserves, or for catsup.

One ounce of good Tomato seed will produce upward of four thousand plants; and a single plant has been known to yield upward of a bushel of fruit.

Tomatoes may be preserved in a stone or glazed earthen pot, for use in the winter, by covering them with water in which a sufficient quantity of salt has been dissolved to make it strong enough to bear an egg. Select perfectly ripe berries, and cover the pot with a plate in such a manner that it presses upon the fruit without bruising it. Previous to cooking these Tomatoes, they should be soaked in fresh water for several hours.

Besides the various modes of preparing this delicious vegetable for the table, it may be preserved in sugar, and used either as a dessert, or on the tea-table, as a substitute for Peaches or other sweetmeats. It also makes exquisite pies and tarts, and excellent catsup.

A celebrated writer observes, that "the common Tomato made into a gravy, by stewing over the fire, and used as a sauce for meat, has been known to quicken the action of the liver and of the bowels, better than any medicine he ever made use of." He states farther, that "when afflicted with inaction of the bowels, headache, a bad taste of the mouth, straitness of the chest, and a dull and painful heaviness of the region of the liver, the whole of these symptoms are removed by Tomato sauce, and the mind, in the course of some few hours, is put in perfect tune."

To make them into catsup, use one pint of salt to one peck of Tomatoes; bruise them, and let them stand two days; then strain them dry, and boil the juice until the scum ceases to rise, with two ounces of black pepper, the same quantity of pimento or allspice, one ounce of ginger, one of cloves, and half an ounce of mace.

TURNIP.

NAVET. *Brassica rapa.*

VARIETIES.

Early Garden Stone.	} Best for the Garden.	Large English Norfolk.
Early White Dutch.		Long Tankard, or Hanover.
Early Snow Ball.		White Flat, or Globe.
Early Red Top.		Yellow Maltese.
Strap Leaved Red Top.		Yellow Stone.
Early Green Top		Dale's Yellow Hybrid.
Yellow Aberdeen.		Long Yellow.
Long White.		Russia, Swedish, or Ruta Baga.

This is a wholesome and useful plant, both for man and beast, and highly deserving of cultivation. It being the last esculent vegetable in our catalogue, that is raised from seed sold at the various seed stores, I shall endeavour to stimulate those of our yeomanry who have hitherto neglected the culture of this field as well as garden production, to exertion and diligence, by inserting a few extracts from a paper that now lies before me.

“*Culture of Turnips.*—Until the beginning of the eighteenth century, this valuable root was cultivated only in gardens, or other small spots, for culinary purposes ; but Lord Townsend, who attended King George the First in one of his excursions to Germany, in the quality of Secretary of State, observing the Turnip cultivated in open and extensive fields, as fodder for cattle, and spreading fertility over lands naturally barren, on his return to England brought over some of the seed, and strongly recommended the practice which he had witnessed, to the adoption of his own tenants, who occupied a soil similar to that of Hanover. The experiment succeeded ; the cultivation of Field Turnips gradually spread over the whole county of Norfolk, and has made its way into every other district of England. Some of the finest grain crops in the world are now growing upon land, which before the introduction of the Turnip husbandry, produced a very scanty supply of grass for a few lean and half-starved rabbits.”

Mr. Colquhoun, in his ‘*Statistical Researches*,’ estimated the value of the Turnip crop annually growing in the United Kingdom of Great Britain and Ireland, at fourteen million pounds sterling, (equal to upward of SIXTY MILLIONS OF DOLLARS.) But when we farther recollect, that it enables the agriculturist to reclaim and cultivate land, which, without its aid, would remain in a hopeless state of natural barrenness ; that it leaves the land clean and in fine condition, and also insures a good crop of Barley, and a kind plant of Clover ; and that this Clover is found a most excellent preparative for Wheat, it will appear that the subsequent advantages derived from a crop of Turnips must infinitely exceed its estimated value as fodder for cattle.

The preceding remarks show the kind of land that may be made capable of producing not only Turnips, but other things of equal value. It must, however, be granted, that some soils naturally suit particular kinds of vegetables better than others, and that, in general, exotic plants will succeed

best in such soils as are nearest like their own native soil. As we have not always a choice, I would inform the Young Gardener, if he has a very light soil, which is not suitable for vegetables in general, he may sometimes get two crops of Turnips from it in one year, by sowing seed for the first crop in March, and that for his second about the middle of August. For general crops, it will be better to have ground manured with short rotten dung, or compost containing a considerable proportion of coal, wood, peat, or soapers' ashes. Ground that has been well manured for preceding crops, and also ground fresh broken up, will do well for Turnips.

It is important that particular attention be paid to the time of sowing the seed; for if the first crop be not sown soon enough to be gathered early in July, they are seldom fit for the table, being hot, stringy, and wormy; and if the crop intended for autumn and winter use is sown before August, unless it be a very favourable season, if they even escape the attacks of insects and reptiles, they often get so defective, that they seldom keep through the winter.*

To have Turnips in perfection, they should be hoed in about a month after they are sown, or by the time the plants have spread to a circle of about four inches, and again about a month from the first hoeing, leaving them from six to nine inches apart. They will yield the cultivator more profit when treated in this way, than when left to nature, as is too frequently done.

* Previous to sowing Turnip seed, the gardener should procure a suitable quantity of lime, soot, or tobacco dust, so as to be prepared for the attacks of insects. It should be recollected that Turnip seed will sometimes sprout within forty-eight hours after it is sown, and that very frequently whole crops are devoured before a plant is seen above ground. A peck of either of these ingredients, mixed with about an equal quantity of ashes, or even dry road dust, scattered over the ground, morning and evening, for the first week after sowing the seed, would secure an acre of ground, provided the composition be used in such a way that the wind carry it over the whole plot; and as the wind often changes, this end may be effected by crossing the land in a different direction each time, according as the wind may serve. If gardeners who raise Radishes, Cabbage, and such other vegetables as are subject to the attacks of insects, were to pursue this course, they would save themselves from considerable loss.

It is generally admitted that one pound of Turnip seed is amply sufficient for an acre of ground, yet some will use considerably more, because of the difficulty of distributing so small a quantity of seed regularly broad-cast. This difficulty is, however, obviated by sowing the seed in drills; and although it may seem a tedious process to those who have no other means of doing it than by hand, the facilities thus afforded of hoeing between the rows, more than compensate for the extra labour.

I once induced a friend of mine to sow four ounces of Turnip seed, in August, in drills a foot apart, by which means he made it extend over more than half an acre of land; and by hoeing the plants twice, he had the gratification of pulling four hundred bushels of handsome Turnips, which is more than is generally taken from an acre of land cultivated in the ordinary way.

If seed of the Russia or Swedish Turnip be sown in drills, any time in the month of July, or even early in August, they will produce fine roots toward the end of October, provided the land be good, and well worked. When the plants are up strong, they must be hoed and thinned to the distance of twelve or fifteen inches from each other; another hoeing will be necessary in five or six weeks afterward. This will make them grow freely. If cultivated in the field, frequent ploughing between the rows will be beneficial.

The Turnip is a favourite vegetable with some, and in England, a leg of mutton and caper sauce is considered by epicures as but half a dish without mashed Turnips. To have them in perfection, they should, after having been deprived of their rind, be equalized by cutting the largest transversely in the centre, and then, after being boiled tender, let them be taken up, and pressed as dry as possible; at the same time, let a lump of butter and a due proportion of Cayenne pepper and salt be added, and be beaten up with the Turnips until properly mixed. Use the natural gravy from the meat unadulterated, and such condiment as may be most esteemed.

AROMATIC, POT, AND SWEET HERBS.

GRAINES D'HERBES AROMATIQUES, ODORIFERANTES ET A
L'USAGE DE LA CUISINE.

Angelica, Garden,	<i>Angelica atropurpurea.</i>
Anise,	<i>Pimpinella anisum.</i>
Basil, Sweet,	<i>Ocimum basilicum.</i>
Borage,	<i>Borago officinalis.</i>
Burnet, Garden,	<i>Poturium sanguisorba.</i>
Caraway,	<i>Carum carui.</i>
Chervil, or Cicely the Sweet,	<i>Scandix odorata cerefolium.</i>
Clary,	<i>Salvia sclara.</i>
Coriander,	<i>Coriandrum sativum.</i>
Dill,	<i>Anethum graveolens.</i>
* Fennel, Common,	<i>Anethum feniculum.</i>
* Fennel, Sweet,	<i>Anethum dulce.</i>
Marigold, Pot,	<i>Calendula officinalis.</i>
* Marjoram, Sweet,	<i>Origanum marjorana.</i>
* Mint, Spear,	<i>Mentha virides.</i>
* Mint, Pepper,	<i>Mentha piperita.</i>
* Mint, Penniroyal,	<i>Mentha pulegium.</i>
* Sage, Common,	<i>Salvia officinalis.</i>
* Sage, Red,	<i>Salvia clandestinoides.</i>
Savory, Summer,	<i>Satureja hortensis.</i>
* Savory, Winter,	<i>Satureja montana.</i>
* Tarragon,	<i>Artemisia dracunculus.</i>
* Thyme, Common,	<i>Thymus vulgaris.</i>
* Thyme, Lemon,	<i>Thymus serpyllum.</i>

AROMATIC Herbs are such as impart a strong spicy odour and savoury taste; many of them are used as small pot herbs, and for sauces, stuffings, and other uses in cooking. As only a small quantity of these are necessary in private gardens, a by-corner may be allotted for them, and such medicinal herbs as may be wanted in a family.

It may be necessary to explain, as we go along, that there are three principal descriptive names given to plants, namely, Annuals, Biennials, and Perennials. The Annuals being but of one season's duration, are raised every year from seed. The Biennials are raised from seed one year, continue till the second, then perfect their seed, and soon after die; some of these should also be raised every year from seed. The Perennials may be raised from seed, but when once raised, they will continue on the same roots many years. Those

marked * are of the latter description, and may be propagated by suckers, offsets, cuttings, or parting the roots. Those who have not already a plantation of these herbs, may sow the seed of any of the different kinds in April or May, in drills about half an inch deep, and twelve inches apart, each kind by itself. The plants may afterward be transplanted into separate beds; or, if a drill for each kind be drawn two feet apart, the seed may be sown in them, and the plants afterward thinned out to proper distances, according to the natural growth of the different kinds of plants.

PLANTS CULTIVATED FOR MEDICINAL AND OTHER PURPOSES.

GRAINES DE PLANTES MEDICINAL.

Bene,	<i>Sesamum orientale.</i>
Boneset, or Thoroughwort,	<i>Eupatorium perfoliatum.</i>
* Balm,	<i>Melissa officinalis.</i>
Bean, Castor Oil,	<i>Recinus communis.</i>
Burdock,	<i>Arctium lappa.</i>
Catnep,	<i>Nepeta cataria.</i>
Celandine,	<i>Chelidonium majus.</i>
* Chamomile,	<i>Anthemis nobilis.</i>
* Comfrey,	<i>Symphytum officinale.</i>
* Elecampane,	<i>Inula helenium.</i>
Feverfew,	<i>Chrysanthemum parthenium.</i>
* Horehound,	<i>Marubium vulgare.</i>
* Horsemint,	<i>Monarda punctata.</i>
* Hyssop,	<i>Hyssopus officinalis.</i>
* Lavender,	<i>Lavendula spica.</i>
Lovage,	<i>Ligusticum levisticum.</i>
* Mallow, Marsh,	<i>Althea officinalis.</i>
* Motherwort,	<i>Leonurus cardiaca.</i>
* Patience Dock,	<i>Rumex patens.</i>
* Pinkroot, Carolina,	<i>Spigelia Marylandica.</i>
Poppy Opium, (annual,)	<i>Papaver somniferum.</i>
* Rosemary,	<i>Rosmarinus officinalis.</i>
* Rue, Garden,	<i>Ruta graveolens.</i>
Saffron, Bastard,	<i>Carthamus tinctorius.</i>
Skullcap, or Mad Dog Plant,	<i>Scutellaria lateriflora.</i>
Snakeroot, Virginian,	<i>Aristolochia serpentaria.</i>
* Sorrel,	<i>Rumex acetosa.</i>

* Southernwood,	<i>Artemisia abrotanum.</i>
* Speedwell, Virginian,	<i>Veronica Virginica.</i>
* Spikenard,	<i>Aralia racemosa.</i>
* Tansy,	<i>Tanacetum vulgare.</i>
* Wormwood,	<i>Artemisia absinthium.</i>

THE generality of Aromatic, Sweet, and Medicinal Herbs may be raised from seed sown in April and May. The greater part of the above-mentioned plants are Perennial, and will multiply from the seed they drop, or from partings from the roots. The offsets, roots, or young plants thus raised, should be planted at suitable distances from each other early in the spring.

The beds should afterward be kept free from weeds, and as the herbs come into flower, they should be cut on a dry day, and spread in a shady place to dry, for winter use. The best way to preserve them after they are dried, is to rub them so as to pass them through a sieve, then pack them in bottles or boxes, each kind by itself; they should be afterward kept in a dry place.

In the month of October, the herb beds should be examined. Lavender, Rosemary, and other tender plants, should be taken up, potted, and placed in a frame or greenhouse for the winter. Thyme, Hyssop, Winter Savory, Southernwood, Sage, Rue, and the like, will require their tops to be neatly dressed; and Pot Marjoram, Burnet, Tarragon, Tansy, Penniroyal, Sorrel, Chamomile, Fennel, Horehound, Mint, Lovage, and other kinds of hardy Perennial Herbs, should be cut down close to the ground.

After this is done, it will be proper to dig lightly, and loosen the ground between the roots of the shrubby plants; but the beds of close-growing running plants, such as Mint, Running Thyme, and all other creeping herbs, will not well admit of digging; therefore, after the stalks are cut down, and the beds cleared of weeds, dig the alleys, and strew some of the loose earth evenly over the beds; and if the ground be rather poor or light, a top dressing of very rotten dung will be of considerable service.

This dressing will give proper nurture and protection to the roots of the plants, a neat appearance to the garden, and in spring the shoots will rise with renewed vigour.

Having finished the Catalogue, I will now proceed to give directions for making the most of a piece of ground well manured for early crops. In the general directions at the commencement, I observed that good rich manure was indispensably necessary to the production of some particular kinds of vegetables; it may be farther observed, that rich ground will produce two or three valuable crops, but it requires some attention, to make use of it to the best advantage. If the gardener has leisure to dig such ground in March or April, as he intends for Beans, Cucumbers, Tomatoes, Egg-plants, or other tender plants, he may raise Radishes, Spinach, Lettuce, or other small salads on it, by leaving a space for his hills or drills; or Radish seed may be sown lightly over the beds of Beets, Carrots, Parsnips, &c., but they must not be suffered to run to seed, as this would injure the other plants. When the first crops are gathered, it requires a little consideration before a second is planted, in order that a sufficient quantity of the best ground may be reserved for the most particular and valuable varieties of vegetables.

That I may be understood, I have adopted the following plans, representing beds of earth; this will answer the same purpose as bringing my readers on the ground.

No. 1. The following lines represent drills six inches apart.

March 25.—Sow Parsley, Onion, or other small seed.

March 25.—Sow Radish seed.

March 25.—Sow Parsley, Onion, or other small seed.

The Radishes being pulled early in May, leaves the intermediate ground for the other plants.

No. 2. Drills ten inches apart.

April 1.—Sow Spinach, or Radish seed.

April 15.—Plant early Cabbage Plants.

April 1.—Sow Spinach, or Radish seed.

By the time the Cabbage requires the whole of the ground, the Spinach or Radishes may be gathered.

If this bed be cleared of the second crop by the middle of July, it may be planted with Celery, Turnip, or Black Radish seed. If the Cabbage be of the late-heading kinds, the ground may be reserved for the first sowing of Spinach, Fetticus, Lettuce, &c., in which case it will require a fresh coat of manure

No. 3. Drills twelve inches apart.

March 20.—Plant slips or cuttings of Horse-radish.

March 20.—Plant Turnip-rooted Beet seed.

March 20.—Plant slips or cuttings of Horse-radish.

If required, a light crop of Radishes may be raised on this bed, which should be pulled while young.

Hoe and thin out the Beets as they progress in growth, and when full grown, they may be gathered, without disturbing the Horse-radish. [*See article Horse-radish.*]

No. 4. Rows, or drills, fourteen inches apart.

 March 20.—Plant hardy Lettuce plants.

 March 20.—Plant hardy Lettuce plants.

Hoe them the first week in April; previous to hoeing the second time, draw a drill between each row of plants, and plant Beet or Carrot seed; this may be covered up in hoeing the Lettuce, and by the time the plants are up strong, the Lettuce will be fit to cut. If these roots are well attended to, they may be cleared off soon enough to produce fall Cabbage, Leeks, Celery, Turnips, Black Radishes, &c.

No. 5. Rows, or drills, sixteen inches apart.

 March 25.—Plant hardy Lettuce plants.

 March 25.—Plant hardy Lettuce plants.

April 20.—Plant Early York Cabbage plants, either between the rows or between the Lettuce.

As soon as the Lettuce is off, hoe the Cabbage, and it will soon cover the ground.

This ground will be suitable for a crop of any of the varieties above mentioned, except Cabbage, the roots of which are apt to get defective, if the same ground be planted with Cabbage twice in succession.

The above, or preceding plans, present a fair specimen of what may be done on a small piece of good ground. If the

young gardener takes the trouble to keep an account of his transactions, he will soon make discoveries of still greater importance. If not sufficiently acquainted with the different varieties of Cabbage plants, for instance, so as to distinguish the one from the other, by making a memorandum at the time of sowing the seed, will soon get acquainted with the different varieties of plants; he will also discover the difference in the growing of his seed, and know who to blame if any particular kind should not come up.

The following represents a Hot-bed with four sashes, sown March 1 :

Early Dwarf,	Early Battersea,	Early Lettuce,	Egg-plant
Early York,	Drumhead, or	Tomato Seed,	Seed, &c.
or other spring	other summer	Peppers,	partitioned off
Cabbage Seed.	Cabbage Seed.	&c. in shallow	as directed in
		drills.	note to article
			Egg-plant.

It may be necessary to remind my readers of the necessity of being always prepared to sow Cabbage, Lettuce, Tomato, and Egg-plant seed in hot-beds the last week in February, or early in March; for this purpose, let some fresh stable dung and rich compost be engaged beforehand. Some gardeners make their beds on the level ground, but it is always safest to make them in pits from eighteen inches to two feet deep;* in order to do this, the pits should be dug

* When durable heat is required for forcing vegetables, the beds should be made on level ground, in order that linings may be applied to the outside of the frame, which, by frequent renewal, will enliven the heat of the bed, and thus bring tender vegetables to maturity, which would otherwise suffer from a decline of the heat. For particular directions, see *Observations on Forcing Vegetables*; also, article on *Forcing Asparagus*.

in autumn, or a heap of dung may be deposited on the ground intended for the beds before the frost sets in, and good earth may be obtained from the pits without any difficulty.

The frames should be made of good sound planks; the back plank may be two feet wide, and the end ones may be so sloped as to make a fifteen-inch plank do for the front. A frame calculated for four sashes, of three feet in width by six in length, as above described, should be nearly thirteen feet long, and about six broad at the top.

The frame being set over the pit, and properly fastened, the fresh dung should be spread regularly in the pit to the depth of twenty to twenty-four inches; if the dung be in a good heating condition, cover it six or eight inches deep with mould, then lay on the sashes, and protect the beds from the inclemency of the weather. In two or three days the rank steam will pass off; it will then be necessary to stir the mould before the seed be sown, to prevent the growth of young weeds that may be germinating; then sow the seed either in shallow drills or broad-cast, as equally as possible, reserving a small quantity of the warm mould to be sown lightly over the seed. The beds should afterward be attended to, as directed for Broccoli and Cauliflower. This description of a hot-bed is intended expressly for the raising of Spring Cabbage, Lettuce, Tomatoes, and such other plants as may be required for early planting. Beds made earlier in the season, or for forcing, will require a greater quantity of manure. [*See Calendar for January, February, and March.*]

OBSERVATIONS

ON

FORCING VEGETABLES.

BEFORE I commenced preparing this work for the press, I intended to have written largely on the subject of forcing fruits as well as vegetables; but when I considered my motto, and that I was writing for young gardeners, I concluded to occupy my pages in such a manner as to effect the greatest possible good at the smallest expense. Of the several branches of Horticulture, some are of greater importance than others; and as the products of the kitchen garden form important articles of food for the bulk of mankind, it should be our first care to treat largely on the subject of this most useful part of gardening. Next to this is the cultivation of fruits, and the production of ornamental plants and flowers, each of which will be noticed in their respective departments.

As I stand pledged to offer some remarks on forcing, or rather forwarding vegetables, by artificial means, I shall endeavour to confine my observations to such points as are of primary importance; and in order to convince my readers of the importance of this subject, I shall first endeavour to show the utility of an artificial climate suited to the various species of useful plants. In England, a regular succession of vegetables can be obtained from the natural ground every month in the year, and the fruits of that country, from the summer heat being moderate, are of longer continuance than with us, and yet the English make gardening a science, and employ the elements, as well as the ingenuity of man, in the production of fruits and vegetables out of the ordinary season,

I shall not attempt to treat of the cultivation of Pine-apples, Grapes, Cherries, or other fruits grown in forcing-houses; nor would it be advisable with us to undertake to raise Cucumbers, Melons, &c., in frames throughout the severe winters of our Northern States; but it must be acknowledged, that the extreme heat of our summers is as detrimental to the cultivation of some of the most valuable kinds of fruits and vegetables, as the coldness of our winters, and for these reasons, artificial aid is more necessary here in the winter and spring of the year than in England. The inhabitants of that country obtain a supply of the different varieties of Artichokes, Broad Beans, Borecole, Broccoli, Cauliflower, Kale, Lettuce, Radishes, Rhubarb, Spinach, Turnips, and salads in general, a great part of the year from their kitchen gardens, whereas, if we were to attempt to supply our markets with culinary vegetables at all times, in any thing like the abundance that they have them there, we must, out of the ordinary season for gardening operations, turn our attention to the protecting and forwarding, as well as the forcing system.

Before I proceed to show the method of forcing vegetables, it may be necessary for me to remind my readers, that in providing an artificial climate, they should consider the nature of the plants they intend to cultivate, and endeavour to supply them with that which is best calculated to nourish and support them. I have, in another part of this work, endeavoured to show, that heat, light, air, and moisture, are each essential to vegetation, and that these should be supplied in a judicious manner, according to circumstances.

In the midst of our Northern winter, which is the usual time for forcing in England, we are subject to north-west winds, which produce extreme freezing. Now, as we have not yet discovered how to make an artificial air, it will not be safe for the gardener to raise a bottom heat under any kind of vegetable, until such times as he can impart a tolerable share of salubrious air, as the heat without air will soon destroy the fruits of his labour,

Perhaps the safest time to commence forcing in frames, is soon after the middle of February, and the early part of March. I before hinted, that the depth of heating materials must be regulated by the season of the year at which the work is commenced, and also to the purposes for which the hot-beds are intended. Beds used for the purpose of raising half-hardy plants, or for procuring seedling plants late in the spring, may be made in the manner recommended for the common hot-bed; but if substantial heat is required to be kept up, the beds must be so contrived as to admit of linings as the heat decreases; and the dung should undergo a regular process of preparation, according to the use it is intended for. Compost heaps should also be provided, in order to furnish suitable mould to the different species of plants; for this purpose, all the old hot-bed dung and mould, leaves, tan, turf, sand, and other light manures and decayed animal dung, should be collected together.

In some cases, when a slight hot-bed is recommended for forwarding hardy plants, if it should happen that a seedling Cucumber bed be at liberty, it may answer every purpose for Radishes, Lettuce, or other hardy plants; or such a bed may be spawned for Mushrooms, if required.

If the forcing be commenced before the coldest of the winter is past, great precaution must be used, lest the plants be injured by cold cutting winds, or destroyed by heat for want of air. To prevent the former accident, warm dung should be placed around the frames, and the sashes covered with mats and boards every night. If full air cannot be admitted in the day time, the sashes must be slidden down to let off the steam; at the same time mats may be laid over the aperture, to prevent cold air entering to the plants.

If the bottom heat in a bed be too violent, which is sometimes the case, means must be used to decrease it. This is generally effected by making holes in the bed with a stake sharpened at the end, or with a crow-bar; which holes should be filled up when the heat is sufficiently reduced. In lining

hot-beds, if the heat is reduced in the body of the beds, holes may be carefully made to admit heat from the fresh linings, so as to enliven the heat of the bed.

A Fahrenheit thermometer should always be at hand at the time of forcing, to be used, when necessary, to regulate the heat in the beds; and the water that is used in cultivating plants in frames, should be warmed to the temperature of the air, or according to the heat required for the various kinds of plants, which will be shown in the annexed articles.

FORCING ASPARAGUS IN HOT-BEDS.

As Asparagus is apt to grow weak and slender by extreme bottom heat, it is forced with greater success, and with less trouble, in flued pits in a hot-house, than in dung hot-beds, because the heat from tan is more regular; but a very suitable bed may be formed in a deep hot-bed frame, made in the usual way. If dung alone, or a mixture of dung and leaves, be used, it should be in a state past heating violently before it is made into a bed; but if the gardener has no choice of materials, he may make his hot-bed in the usual way, and if the depth of heating materials be two feet, he may lay on a foot of old hot-bed dung, tan, or any light compost, that will admit of the heat passing through it.

It may be necessary to state farther, that though too much bottom heat should be avoided, heat is necessary to the production of the vegetable in a moderate time, which is generally effected in a month or six weeks after the commencement of the operations. For the purpose of keeping up a regular heat, a lining of hot dung should be applied around the frame, and changed as occasion requires.

Provide plants from two to four, or even six years old, trim their roots, and place them in rows on the beds; when one row is laid, strew a little mould among the roots, then proceed in the same way with one row after another, keep-

ing them on a level, as the surface of the bed at first lay, till you have finished planting them; then lay among the buds and roots some fine vegetable or other rich mould, work it in among them with your fingers, and cover the beds over about an inch thick; and upon that, lay three inches in depth of vegetable mould not very rotten, old tan, or any other light compost that will admit the water to run quickly through.

If there be a strong heat in the bed, slide down the sashes till it begins to decline. The temperature at night should never be under 50°, and it may rise to 65° without injury; when the buds begin to appear, as much air must be daily admitted as the weather will permit. In two or three days after the beds are planted, the heat will begin to rise: the beds should then have a moderate supply of water, applied from a watering-pot with the rose on; repeat such watering every three or four days.

When the buds are up three inches above the surface, they are fit to gather for use, as they will then be six or seven inches in length. In gathering them, draw aside a little of the mould, slip down the finger and thumb, and twist them off from the crown: this is a better method than to cut them; at least, it is less dangerous to the rising buds, which come up thick in succession.

An ordinary-sized frame calculated for three sashes will hold from three to five hundred plants, according to their age and size, and will, if properly managed, yield a dish every day for about three weeks. On the above estimate, if a constant succession of Asparagus be required, it will be necessary to plant a bed every eighteen or twenty days.

Rhubarb and Sea-Kale may be, and sometimes are, forced in the same manner as Asparagus; but the most general mode is to excite them where they stand in the open garden, by the application of warm dung.

FORWARDING BROAD BEANS, OR ENGLISH DWARFS.

IN the article Broad Beans, (*Vicia faba*,) I have already urged the necessity of early planting, in order that a full crop may be insured before the approach of warm weather; but as the ground is often frozen at the time they ought to be planted, some of the best kinds may be planted in boxes, and placed in a moderate hot-bed in February, or early in March. If the plants thus raised be not made too tender, they may be transplanted into the open ground the latter end of March; this will enable them to produce their fruit early in June.

Or if a heap of manure be spread thick on a piece of ground late in autumn, it will keep the earth from freezing; and if this manure be removed in February, and a frame placed over the spot and protected from extreme cold, the seedlings may be raised therein, and transplanted into the garden, as directed in article, page 39.

Those who have not the convenience of hot-beds or frames, may, in the month of February, plant some of the seed about two inches deep in boxes kept in the cellar, or in earth on the floor, which will produce plants fit to transplant in the open garden toward the latter end of March or early in April.

FORCING KIDNEY BEANS.

THE most dwarfish kinds of Kidney Beans may be raised in hot-beds; but they require a substantial heat to mature them. The temperature within the frames should be kept up to 60°, and may rise to 70° or 75°, provided the steam be let off. In order to insure sufficient heat to bring them into a bearing state, the plants may be first raised in small pots plunged into a hot-bed, or a small bed may be prepared,

earthed over with light rich compost, six inches deep, and the Beans planted therein, and covered one inch.

The second hot-bed should be earthed over to the depth of eight or nine inches, and the Beans transplanted as soon as they are two or three inches high, in cross rows twelve or fifteen inches apart, by three or four inches in the rows, or in clumps a foot apart. When the season is so far advanced that one bed, with the help of linings, will bring the plants well into fruit, the seed may be planted at once to remain for podding; or if the gardener should choose to mature his crop in the open ground, he may raise his plants in boxes or pots in the month of April, and plant them out in a warm border early in May.

Beans raised in hot-beds will require considerable attention. Cover the glasses every night with mats and boards; admit fresh air every mild day, give occasional gentle waterings, and earth them up carefully as they progress in growth, to strengthen them.

FORWARDING BROCCOLI AND CAULIFLOWER.

IN treating of the method of cultivating this family of plants, in the articles under each head, I recommended an artificial climate to be provided for them, so as to induce them to arrive at full perfection in the winter and early part of the spring. Gardeners who have provided frames for the purpose of making hot-beds, in the spring, may make use of them through the winter, in protecting Broccoli and Cauliflower; and as the frames will not be wanted until the severity of the winter is past, such plants as are left at that season may be protected by a covering of boards, straw, or litter, as occasion may require.

If Cauliflower be required early in the summer, the plants raised in the preceding autumn should be transplanted from the beds into the open ground, in the month of March, and

be protected by hand glasses. This would insure their heading before the approach of extreme warm weather, which is very injurious to Cauliflower.

FORCING CUCUMBERS.

To produce Cucumbers at an early season, should be an object of emulation with every gardener. The business of forcing them should commence about eight or ten weeks before the fruit is desired, and a succession of plants should be raised to provide for accidents. Some choose the Short Prickly, others the Long Green and White Spined; and seed two or three years old is generally preferred, as it is not so apt to run to vines.

The seed is generally sown in pots or boxes of light rich mould, and placed in a hot-bed; and some sow the seed in the earth of a small bed prepared for the purpose. In either case, as soon as the plants have fully expanded their two seed leaves, they may be transplanted into pots, putting three plants in each pot; when this is done, apply water warmed to the temperature of the bed, and shut down the glasses, keeping them a little shaded by throwing a mat over the glass, till the plants have taken root. When they are about a month old, they will be fit to transplant into the fruiting bed.

To prepare the dung properly, is of the greatest importance in forcing the Cucumber, and if not done before it is made into a bed, it cannot be done afterward, as it requires turning and managing to cause it to ferment freely and sweetly. Fresh dung from the stable should be laid in a heap, turned three times, and well mixed with a fork; if any appears dry, it should be made wet, always keeping it between the two extremes of wet and dry, that the whole may have a regular fermentation.

A dry situation should be chosen on which to form beds,

so that no water can settle under the dung. The substance of dung from the bottom of the bed should be from three to four feet, according to the season of planting, and the mould should be laid on as soon as the bed is settled, and has a lively, regular-tempered heat. Lay the earth evenly over the dung, about six inches deep; after it has lain a few days examine it, and if no traces of a burning effect are discovered, by the mould turning of a whitish colour and caking, it will be fit to receive the plants; but if the earth appears burned, or has a rank smell, some fresh sweet mould should be provided for the hills, and placed in the frame to get warm; at the same time, vacancies should be made to give vent to the steam, by running down stakes.

After the situation of the bed has been ascertained, and the heat regulated, the hole should be closed, and the earth formed into hills; raise one hill in the centre under each sash, so that the earth is brought to within nine inches of the glass; in these hills, plant three seedlings, or turn out such as may be in pots, with the balls of earth about their roots, and thus insert one patch of three plants in the middle of each hill. The plants should be immediately watered with water heated to the temperature of the bed, and kept shaded till they have taken root.

The temperature should be kept up to 60°, and may rise to 80° without injury, provided the rank steam be allowed to pass off; therefore, as the heat begins to decline, timely linings of well-prepared dung must be applied all round the frame. Begin by lining the back part first; cut away the old dung perpendicularly by the frame, and form a bank two feet broad, to the height of a foot, against the back of the frames; as it sinks, add more; renew the linings round the remainder of the bed as it becomes necessary, and be careful to let off the steam, and give air to the plants at all opportunities.

Give necessary waterings, mostly in the morning of a mild day, in early forcing; and in the afternoon, in the advanced

season of hot sunny weather. Some use water impregnated with sheep or pigeon dung. As the roots begin to spread, and the vines to run, the hills should be enlarged by gathering up the earth around them, for which purpose a supply of good mould should be kept ready at hand, to be used as required.

When the plants have made one or two joints, stop them, by pinching off the tops, after which they generally put forth two shoots, each of which let run till they have made one or two clear joints, and then stop them also; and afterward continue throughout the season to stop them at every joint; this will strengthen the plants, and promote their perfecting the fruit early.

The following artificial operation is recommended by Abercrombie, Phial, and other writers, as essential to the production of a full crop of Cucumbers under glass. In plants more freely exposed to the open air, the impregnation is effected by nature. Those which some call false blossoms are the male flowers, and are indispensable in this operation.

“The Cucumber,” Abercrombie observes, “bears male and female blossoms distinctly on the same plant. The latter only produce the fruit, which appears first in miniature, close under the base, even before the flower expands. There is never any in the males; but these are placed in the vicinity of the females, and are absolutely necessary, by the dispersion of their farina, to impregnate the female blossom; the fruit of which will not otherwise swell to its full size, and the seed will be abortive. The early plants under glass, not having the full current of natural air, nor the assistance of bees and other winged insects to convey the farina, the artificial aid of the cultivator is necessary to effect the impregnation. At the time of fructification, watch the plants daily; and as soon as the female flowers and some male blossoms are fully expanded, proceed to set the fruit the same day, or next morning at farthest. Take off a male blossom, detaching it with part of the footstalk. Hold this

between the finger and thumb ; pull away the flower leaves, or petals, close to the stamens and antheræ, or central part, which apply close to the pistil in the bosom of the female flower, twirling it a little about, to discharge thereon some particles of the fertilizing powder. Proceed thus to set every fruit, as the flowers of both sorts open, while of a lively full expansion ; and generally perform it in the early part of the day, using a fresh male, if possible, for every impregnation, as the males are usually more abundant than the female blossoms. By this management, the young fruit will soon be observed to swell freely."

Cucumbers attain the proper size for gathering in from fifteen to twenty days after the time of setting ; and often in succession for two or three months or more, in the same beds, by good culture.

FORWARDING CUCUMBERS UNDER HAND GLASSES.

If it be desired to have Cucumbers in the open garden at an early season, the plants may be raised in pots as before directed, and planted in a warm border either in the earth, or in hot-bed ridges. A hand-glass should be provided for each hill, which must be kept close down every night and in cool days, taking care to admit air when practicable. The plants may be hardened by degrees, by taking off the glass in the heat of the day, and as the weather gets warm they may be left to nature.

FORWARDING LETTUCE FOR USE IN WINTER.

HEAD Lettuce may be cultivated for use in the winter season by means of gentle hot-beds, or in cold-beds made in the manner recommended for the raising of early Cabbage

plants, &c. (See article Cabbage.) For such Head Lettuce as may be wanted for use before Christmas, the Hardy Green, the Loco Foco, and Coss, are the most suitable kinds to sow; and plants may be raised in the open border by sowing seed two or three times between the middle of August and the first week in September. The plants from these sowings may be set out, about six inches apart, in cold-beds, when they are one or two inches high.

In September and early in October, some of the Silesia, Sugar Loaf, Butter Lettuce, or any other esteemed sorts, may be sown in a cold-bed frame, which, with the aid of sashes, will produce plants in from a month to six weeks; these being planted in gentle hot-beds in November and December, will produce Head Lettuce until a plentiful supply can be obtained from the open borders. The same attention is necessary, as respects the protection of these beds, as for other half-hardy plants.

FORCING MUSHROOMS AT ALL SEASONS.

THE *Agaricus* is said to be the most extensive genus in the vegetable kingdom. The species are determined upon various principles. As some of the kinds are poisonous, it is necessary to describe the eatable Mushroom. Loudon says, it is most readily distinguished when of a middle size, by its fine pink or flesh-coloured gills, and pleasant smell. In a more advanced age, the gills become of a chocolate colour, and it is then more apt to be confounded with other kinds of dubious quality; but that species which most nearly resembles it, is slimy to the touch, destitute of fine odour, and has a disagreeable smell.

Again: the noxious kinds grow in woods, while the true Mushroom springs up chiefly in open pastures, and should be gathered only in such places.

Unwholesome *fungi* will sometimes spring up on artificial

beds in gardens; thus, when the spawn begins to run, a spurious breed is often found to precede a crop of genuine Mushrooms. The poisonous toad-stool, *Agaricus cirocus*, may generally be detected by the presence of a sickly, nauseous smell, though some hurtful kinds are so free from any thing disagreeable in the smell, as to make any criterion, drawn from that alone, very unsafe. The wholesome kinds, however, invariably emit a grateful, rich odour. The *Agaricus campestris* is most generally cultivated. Dr. Withering mentions other eatable varieties, which grow considerably larger, but are inferior in flavour; he says "that a plant of the variety Georgia was gathered in an old hot-bed at Birmingham, which weighed fourteen pounds; and Mr. Stackhouse found one fifty-four inches in circumference, having a stem as thick as a man's wrist."

Mushrooms may be obtained at any season of the year, by a proper regulation of the time and manner of forming the beds. A good crop is sometimes collected without making a bed on purpose, by introducing lumps of spawn into the top mould of old hot-beds.

The methods of procuring and propagating spawn, and of forming Mushroom beds, are numerous. Indigenous spawn may be collected in pasture lands in September and October, or it may be found in its strength and purity in the paths of mills worked by horses, or in any other horse-walks under shelter; it is frequently found in old hot-beds and dunghills in the summer season, and Mushrooms of good quality may often be seen beginning to form on the surface, like large peas; when these are absorbed, it is time to take out the spawn, which is generally in hard, dry lumps of dung, the spawn having the appearance of whitish coarse pieces of thread. The true sort has exactly the smell of a Mushroom. If spawn thus collected be required for immediate use, it may be planted in the beds at once, or it will keep three or four years, if laid to dry with the earth adhering to it, and afterward placed in a warm, dry shed, where there

is a current of air; but if it be not completely dried, the spawn will exhaust itself or perish, as it will not bear the extremes of heat, cold, or moisture.

Such of my readers as may have hitherto been unacquainted with the cultivation of Mushrooms, must perceive, from the preceding remarks, that a Mushroom bed is simply a heap of animal dung and earth, so tempered as to be capable of producing and preserving spawn; but in order to have fruitful spawn at all times, it should be so formed as to be always at command. To this end, a quantity of fresh horse droppings mixed with short litter, should be collected; add to this one third of cow dung, and a small portion of good earth, to cement it together; mash the whole into a thin compost, like grafting clay; then form it in the shape of bricks; which being done, set them on edge, and frequently turn them until half dry; then with a dibble make one or two holes in each brick, and insert in each hole a piece of spawn the size of an egg: the bricks should then be laid where they can dry gradually. When dry, lay dry horse dung on a level floor, six or eight inches thick; on this, pile the bricks, the spawn side uppermost. When the pile is snugly formed, cover it with a small portion of fresh warm horse dung, sufficient in quantity to produce a gentle glow through the whole. When the spawn has spread itself through every part of the bricks, the process is ended, and they may be laid up in any dry place for use. Mushroom spawn, made according to this receipt, will preserve its vegetating powers for many years, if well dried before it is laid up; if moist, it will grow, and soon exhaust itself.

Mushroom beds are often formed in ridges in the open air, covered with litter and mats, so as to prevent heavy rains exciting a fermentation; and sometimes in ridges of the same sort under cover, as in the open sheds of hot-houses. They are also made in close sheds behind hot-houses, or in houses built on purpose, called Mushroom-houses. A moderately warm, light cellar is peculiarly suited for the pur-

pose in the winter season, as no fire is necessary, and but little water, the application of which frequently proves injurious, when not judiciously managed. Mushrooms may also be raised in pots, boxes, hampers, &c., placed in warm situations; in old-beds, in pits with glazed frames, and in dark frames or pits.

The general way of making Mushroom beds, is to prepare a body of stable dung, moderately fermented, about a yard in thickness, more or less, according to the size and situation in which the bed is to be formed; when the strong heat has subsided, an inch of good mould may be laid over it, and the spawn planted therein in rows five or six inches apart; after this is done, another layer of mould, an inch thick, may be added, and then a coat of straw. Beds well constructed will produce Mushrooms in five or six weeks, and will continue to produce for several months, if care be taken in gathering, not to destroy the young ones. As Mushrooms are gathered, from time to time, the straw should be spread carefully over the bed.

Beds made in a convenient place, where there is space all around, may be formed so as to make four sloping surfaces, similar to the roof of a house; this, by being spawned on the four sides, will yield abundantly. The celebrated Mr. Nichol makes his beds without spawn. The following are his directions, taken from Loudon's *Encyclopædia of Gardening*:

“After having laid a floor of ashes, stones, chips, gravel, or brick-bats, so as to keep the bed quite dry and free from under damp, lay a course of horse-droppings six inches thick. These should be new from the stables, and must not be broken, and the drier the better. They may be collected every day until the whole floor or sole be covered to the above thickness; but they must not be allowed to ferment or heat. In the whole process of making up, the bed should be as much exposed to the air as possible; and it should be carefully defended from wet, if out of doors. When this

course is quite dry, and judged to be past a state of fermentation, cover it to the thickness of two inches with light, dry earth; if sandy, so much the better. It is immaterial whether it be rich or not, the only use of earth here being for spawn to run and mass in. Now lay another course of droppings, and earth them over as above, when past a state of fermentation: then a third course, which, in like manner, earth all over. This finishes the bed, which will be a very strong and productive one, if properly managed afterward.

“Observe, that in forming the bed, it should be a little rounded, in order that the centre may not be more wet or moist than the sides. This may be done in forming the sole or floor at first, and the bed would then be of equal strength in all parts. If it be made up against a wall in a cellar, stable, or shed, it may have a slope of a few inches from the back to the front, less or more, according to its breadth. I have sometimes been contented with two courses as above, instead of three; and often, when materials were scarce, have made them up slighter, thus: three four-inch courses of droppings, with one inch of earth between each, and a two-inch covering at top. Such a bed as this, I have had produce for ten or twelve months together; but very much depends on the state of the materials, and on the care taken in making it up, also on the after management.

“The droppings of hard-fed horses only are useful. Those of horses kept on green food will, of themselves, produce few or no mushrooms. I have made up beds from farm horses, fed partly on hard and partly on green food, and from carriage or saddle horses, fed entirely on corn and hay; treated them in the same way in every respect; and have found, not once, but always, those made from the latter most productive. Droppings from hard-fed horses may be procured at the public stables in towns, or at inns in the country, any time of the year; and if the supply be plentiful, a bed of considerable dimensions may be made and finished within five or six weeks. In as many more weeks, if in a

stable or dry cellar, or a flued shed, it will begin to produce, and often sooner; but if the situation of the bed be cold, it will sometimes be two or three months in producing Mushrooms."

It may be necessary to state farther, that extremes of heat, cold, drought, and moisture, should be avoided in the cultivation of Mushrooms. If the temperature keeps up to 50° in the winter, the beds will be safe, and the heat in the beds may rise to 60° or even 70° without injury. Air also must be admitted in proportion to the heat, and 60° should be aimed at as a medium temperature. Water, when given a little at a time, is better than too much at once, after the spawn has begun to spread; and the water for this purpose should always be made blood warm. A light covering of straw may be used to preserve moisture on the surface; and if the beds are made in open frames, or otherwise subject to exposure, the straw may be laid thicker than on beds made in a cellar.

Should beds fail in producing Mushrooms after having been kept over hot or wet, it may be inferred that the spawn is injured or destroyed; but if, on the contrary, a bed that has been kept moderately warm and dry, should happen to be unproductive, such bed may be well replenished with warm water, and a coat of warm dung may be laid over the whole. If this does not enliven the bed after having lain a month, take off the earth; and if, on examination, there is no appearance of spawn, the whole may be destroyed; but if, on the contrary, the bed should contain spawn, it may be renovated by covering it again, especially if any small tubercles be discernible; if the heat should have declined, the spawn may be taken out and used in a fresh bed. If beds be formed in hot-bed frames under glass, some mats or straw must be laid over the glass to break off the intense heat of the sun.

Although only one species of *edible fungi* has yet been introduced into the garden, there are several eatable kinds.

In Poland and Russia there are above thirty kinds in common use among the peasantry. They are gathered at different stages of their growth, and used in various ways : raw, boiled, stewed, roasted ; and being hung up, and dried in their stoves and chimneys, form a part of their winter stock of provisions. Great caution is necessary in collecting Mushrooms for food, and none but the botanist should gather any but the kinds we have described.* Physicians say, " That all the edible species should be thoroughly masticated before they are taken into the stomach, as this greatly lessens the effect of poisons. When accidents of the sort happen, vomiting should be immediately excited, and then the vegetable acids should be given, either vinegar, lemon juice, or that of apples ; after which, give ether and anti-spasmodic remedies, to stop the excessive vomiting. Infusions of gall-nut, oak bark, and Peruvian bark, are recommended as capable of neutralizing the poisonous principle of Mushrooms." It is, however, the safest way not to eat any but the well-known kinds.

FORWARDING MELONS UNDER HAND-GLASSES.

ALTHOUGH our citizens have an opportunity of procuring Melons without artificial aid, yet, as their continuance is short, it may not be amiss to remind the gardener that the directions already given for maturing Cucumbers under glass will apply to Melons, with very few exceptions ; care, however, must be taken that they be kept away from each other at the time of fruiting, as instances often occur of whole crops being entirely ruined, by plants of the same genus being

* In order to ascertain whether what appear to be Mushrooms are of the true edible kinds, sprinkle a little salt over the inner or spongy part : if, in a short time after, they turn yellow, they are unwholesome ; but if black, they may be considered as genuine Mushrooms.

raised too near each other. Those who wish to forward Melons, may prepare a hot-bed in March or April, to raise plants in; the beds may be formed and the plants managed in precisely the same manner as is directed for Cucumbers. If the ridging system be adopted, and a hand-glass applied to each hill, Melons may be obtained one month earlier than the usual time.

Gardeners raising Melons for the supply of city markets, may gratify the public taste early in the season, by pursuing the forwarding, if not the forcing system. Ridges may be prepared in the following manner: In April or May, a trench may be dug in a warm border, about two feet deep and three wide, and of sufficient length for as many hand-glasses as are intended to be employed, allowing three feet for every hill. Some good heating manure should be laid in the pits, managed the same as a common hot-bed; to this must be added good rich mould to the depth of eight or ten inches for the plants to grow in; as soon as the mould is warm, the seedlings may be planted, three plants in each hill, after which the hand-glasses should be set on, and shaded. After the plants have taken root and began to grow, the glasses should be raised in fine days, and propped up so as to admit fresh air; and as the warm weather progresses, they may be taken off in the middle of fine days so as to harden the plants gradually to the weather; and by the latter end of May they may be left to nature.

FORCING PEAS IN HOT-BEDS.

THE best kinds of Peas to force, are those that are the most dwarfish, and the seed is better for being two or three years old, as they will bear earlier, and make less straw. Peas run less to vine by being transplanted, than when they are sown where they are to remain; the plants may be raised in a gentle hot-bed, either in the earth of the bed, or in pots

or boxes. They do not require excessive heat; the temperature must be progressive; beginning at about 50° for the nursery-bed, and from that to 60° or 65° for fruiting.

When the leaves of the plants are fairly expanded, they may be transplanted into rows from twelve to eighteen inches apart; observe, the earth in the fruiting bed should be from twelve to eighteen inches in depth.

As the Peas progress in growth, the earth should be stirred; and when six inches high, small sticks may be applied, so that the tendrills of the Peas may easily take hold; and they should be moulded at the bottom to enable them to support themselves.

When they are in blossom, nip the top off; this greatly promotes the forming and filling of the pods; they will require to be regularly watered, and as the spring advances they may be exposed to the weather, taking care to shelter them in the event of a sudden change.

FORCING POTATOES IN HOT-BEDS.

POTATOES may be forced in a great variety of ways. Those who attempt to mature Potatoes in frames, will of course provide such of the earliest kinds as are not inclined to produce large tops; the Broughton Dwarf, Early Mule, Nonpareil, the Oak, and the Ash-leaved, are of this description.

Potatoes may be forwarded in growth previous to being planted in the beds, by placing them in a warm, damp cellar. Some forward them in pots and boxes, and afterward mature them in a hot-bed; others plant them in the bed at once, in which case the bed should be moulded from fifteen to twenty inches deep, and the heating materials should be sufficient to keep up a moderate heat for two or three months.

Perhaps the most convenient way to force Potatoes in this climate, is to provide pots for the purpose; plant one set in each pot in January, and set them in a warm cellar, till a bed

can be prepared in February, in which put the pots. While the tuberous roots are forming, and before they fill the pots, prepare the beds for maturing them, and then bury them in the mould with the balls of earth attached to them.

The beds should be kept free from frost, and air should be given at every opportunity. The common round Potatoes may be forwarded, by laying them thick together in a slight hot-bed in March, and when they are planted in the borders, a quantity of comb-maker's shavings may be deposited in each hill; this will greatly promote their growth.

FORWARDING RADISHES, &c.

RADISHES may be obtained early in the spring by means of a moderate hot-bed. The earth in the frame should be a foot in depth, and air should be admitted every day after they are up, or they will incline more to tops than roots. If they come up too thick, they should be thinned to one or two inches apart. Give gentle waterings as occasion requires, and keep them well covered in cold nights.

For raising early Radishes without frames, hot-beds may be made in ridges, and arched over with hoop bends, or pliant rods, which should be covered with mats at night, and during the day in very cold weather. In moderate days, turn up the mats at the warmest side; and on fine mild days, take them wholly off, and harden the plants gradually to the weather.

Turnips, Carrots, Onions, or any kind of salads or pot herbs, may be raised in the same way, by sowing the seed in drills and keeping the ground clear of weeds.

FORWARDING RHUBARB.

THOSE who may desire to have this excellent substitute for fruit at an early season, may procure it without much trouble. It is customary with some persons in the southern parts of England, to keep this plant growing in their kitchens, so that they may have it for use at any time. They have strong neat boxes, made for the purpose, about three feet deep and two wide, and in length according to the demand, from four to eight feet; these being kept clean, have the appearance of flour-bins, and they are sometimes so contrived as to have shelves over them in imitation of a kitchen dresser. The plants being taken up out of the garden towards winter, are placed as close at the bottom of the box as they can be, with their crowns level: and some sand being thrown over, sufficient to fill up the interstices, and to cover the crowns about half an inch, finishes the operation. No farther trouble is necessary, except to give a little water, just to keep the roots moist, as they need no light at all; and if the roots be planted in the garden when spring opens, they will, after having taken root, vegetate as strongly as before they were removed.

Roots of Rhubarb taken up in the autumn, packed in sand, and deposited in a warm cellar, will produce stalks earlier than if kept in the garden; and if placed in hot-beds they will yield abundantly, and that at a very early season.

The consumption of this plant in the British metropolis may be judged of by the following extract from the *London Gardener's Magazine*: "Rhubarb, which has for some years been cultivated, is still a subject of increasing interest, and more extensively in demand than ever. On the fifth of May, no less than eight wagon loads, each weighing at least a ton, with an equal quantity in smaller proportions, were sold in Covent Garden market alone. One cultivator, Mr. Myatt, of New Cross, Deptford, had three wagon loads; he has, I believe, nearly twenty acres of it under culture." This plant

contains an acid as fine as the Gooseberry, for pies and tarts ; a square rod of ground will supply a family ; and it may be used till midsummer or later. [*For fuller explanations, see article Rhubarb.*]

FORWARDING SALAD HERBS, SMALL PLANTS, &c.

For the purpose of raising Mustard, Cress, and other salad herbs, also Egg-plants, Tomato plants, &c., in small quantities, a hot-bed may be made, early in the spring, of good heating materials, on the top of which may be laid leaf mould, old tan, or light compost, to the depth of about nine inches. The various kinds of seed may be sown in boxes or flower-pots, and plunged in the top mould up to their rims, and by being well attended to, a supply of small salads, as well as small seedling plants, may be raised without much labour or difficulty. This method is also well calculated for raising annual flower plants at an early season.

FORWARDING TOMATOES.

As this vegetable has become highly appreciated of late years for its excellent qualities, it may be necessary here to observe, that plants raised from seed sown in hot-beds the latter end of February, or early in March, as directed in former pages, will grow to the length of four inches and upward by the first of April, which is one month earlier than they can with safety be trusted in the open garden. If a few of these be pulled from the hot-bed, and transplanted into flower-pots, they may be kept growing therein until settled warm weather, and then turned out and deposited in the ground with the balls of earth entire ; or a fruiting-bed may be prepared by the first of April, in the manner recommended for Bush

Beans, Cucumbers, &c., and the plants inserted in the earth at once ; these will produce ripe fruit a month or six weeks earlier than those cultivated in the ordinary way.

FORCING VARIOUS KINDS OF VEGETABLES.

THE following simple method of forcing vegetables on a small scale is recommended by a correspondent of a London magazine :

“ Mushrooms in winter I obtain by a very simple, though not a new process. Provide boxes three feet long, and one foot eight inches deep ; a quantity of horse droppings, perfectly dry ; some spawn and some light dry soil. Fill the boxes by layers of droppings, spawn, and soil, which must be trodden perfectly tight ; repeat these triple layers till the boxes are full, and all trodden firmly together.

“ Four such boxes at work are sufficient for a moderate demand ; and of a dozen, four brought in at a time, and placed upon a flue of a green-house stove, will produce a fine supply. The surface of these portable beds may be covered with a little hay, and occasionally, though sparingly, watered. It is not absolutely necessary that they be set on the flue of a green-house ; a warm stable, cellar, or any other similar place, will suit equally well. This plan is also convenient for affording a plentiful stock of superior spawn.

“ The same sized boxes will also do for Asparagus ; but for this purpose a sufficient stock of three-year-old plants must be at hand ; also eighteen boxes, four of which are the necessary set to be forced at one time for a middling family. Half fill the boxes with decayed tanner's bark, leaf mould, or any similar mould ; on this, pack the roots as thickly as possible, and fill up the boxes with the bark, &c. Any place in a forcing-house will suit them : on the flue, under the stage, or, in short, any place where they can enjoy the ne-

cessary degree of heat. Besides Asparagus and Mushrooms, Sea-Kale, Buda-Kale, Angelica, small salad, as also various pot herbs, may be raised in the same manner."

Those who have not the conveniences recommended in a green-house, &c., may place the boxes in a hot-bed. The glasses being laid on, and the beds covered at night, will soon promote the growth of the plants, and produce vegetable luxuries at a season when garden products in general are comparatively scarce.

It is unnecessary to show of how much value such processes may be in minor establishments, or in a young country. I wish it to be understood, that in order to the successful cultivation of some of the rare vegetables I have treated of, great pains must be taken in every stage of their growth. If the advice I have given be attended to, I flatter myself we shall soon obtain a supply of many of these luxuries of the garden. My directions are founded on the success attending the practice of some of the best gardeners in this country. I have also had sufficient experience to warrant me in this attempt to contribute my mite toward the attainment of this kind of useful knowledge.

METHOD OF CULTIVATING THE HOP.

HOUBLON. *Humulus lupulus*.

ALTHOUGH the Hop is not a culinary vegetable, yet, as it is more or less used in every part of our country, it may not be amiss to treat of its culture. It is presumed, that, in proportion as habits of temperance are inculcated, our citizens will have recourse to beer as a wholesome beverage; and as a great deal depends on the manner in which Hops are cured, I propose giving directions for their management throughout, so as to enable those who choose, to prepare their own. My information is collected chiefly from Loudon's Encyclopædia of Plants.

"The Hop has been cultivated in Europe an unknown length of time for its flowers, which are used for preserving beer. Its culture was introduced from Flanders in the reign of Henry the Eighth; though indigenous both in Scotland and Ireland, it is little cultivated in those countries, owing to the humidity of their autumnal season. Like other plants of this sort, the Hop bears its flowers on different individuals; the female plants, therefore, are alone cultivated. There are several varieties grown in Kent and Surrey, under the name of Flemish, Canterbury, Goldings, &c.; the first is the most hardy, differing little from the Wild or Hedge Hop; the Golding is an improved and highly productive variety, but more subject to blight than the other.*

"The Hop prefers a deep loamy soil on a dry bottom; a sheltered situation, but at the same time not so confined as to prevent a free circulation of air. The soil requires to be well pulverized and manured previous to planting. In Hop districts, the ground is generally trenched either with a

* Besides these are the Farnham, or Golden Grape, which is cultivated for an early crop; and for late picking, the Mayfield Grape, or Ruffler, is esteemed, which is a dwarfish variety. Great caution is necessary, lest the varieties get mixed, as they will not ripen or dry equally, and consequently cannot be of one uniform colour and quality.

plough or spade. The mode of planting is generally in rows six feet apart, and the same distance in the row. By some, five, six, or seven plants, are placed in a circular form, which circles are distant five or six feet from each other. The plants or cuttings are procured from the most healthy of the old stools; each should have two joints or buds: from the one which is placed in the ground springs the root, and from the other the stalk. Some plant the cuttings at once where they are to remain, and by others they are nursed a year in a garden. An interval crop of Beans or Cabbage is generally taken the first year. Sometimes no poles are placed at the plants till the second year, and then only short ones of six or seven feet. The third year the Hop generally comes into full bearing, and then from four to six poles, from fourteen to sixteen feet in length, are placed to each circle, or one pole to each plant, if cultivated in straight rows. The most durable timber for poles is that of the Spanish Chesnut.

“ The after culture of the Hop consists in stirring the soil, and keeping it free from weeds; in guiding the shoots to the poles, and sometimes tying them for that purpose with bass or withered rushes; in eradicating superfluous shoots which may rise from the root, and in raising a small heap of earth over the root to nourish the plant.

“ Hops are known to be ready for gathering when the chaffy capsules acquire a brown colour, and a firm consistence. Each chaffy capsule, or leaf calyx, contains one seed. Before these are picked, the stalks are detached, and the poles pulled up, and placed horizontally on frames of wood, two or three poles at a time. The Hops are then picked off by women and children. After being carefully separated from the leaves and stalks, they are dropped into a large cloth hung all round within the frame on tenter hooks. When the cloth is full, the Hops are emptied into a large sack, which is carried home, and the Hops laid on a kiln to be dried. This is always to be done as soon as possible after

they are picked, or they are apt to sustain considerable damage, both in colour and flavour, if allowed to remain long in the green state in which they are picked. In very warm weather, and when they are picked in a moist state, they will often heat in five or six hours; for this reason, the kilns are kept constantly at work, both night and day, from the commencement to the conclusion of the Hop-picking season.

“ The operation of drying Hops is not materially different from that of drying malt, and the kilns are of the same construction. The Hops are spread on a hair cloth, from eight to twelve inches deep, according as the season is dry or wet, or the Hops ripe or immature. When the ends of the Hop stalks become quite shrivelled and dry, they are taken off the kiln, and laid on a boarded floor till they become quite cool, when they are put into bags.

“ The bagging of Hops is thus performed: in the floor of the room where Hops are laid to cool, there is a round hole or trap, equal in size to the mouth of a Hop-bag. After tying a handful of Hops in each of the lower corners of a large bag, which serve after for handles, the mouth of the bag is fixed securely to a strong hoop, which is made to rest on the edge of the hole or trap; and the bag itself being then dropped through the hole, the packers go into it, when a person who attends for the purpose, puts in the Hops in small quantities, in order to give the packer an opportunity of packing and trampling them as hard as possible. When the bag is filled, and the Hops trampled in so hard that it will hold no more, it is drawn up, unloosed from the hoop, and the end sewed up, two other handles having been previously formed in the corners in the manner mentioned above. The brightest and finest coloured Hops are put into pockets or fine bagging, and the brown into coarse or heavy bagging. The former are chiefly used for brewing fine ale, and the latter by the porter brewers. But when Hops are intended to be kept two or three years, they are put into bags of strong cloth, and firmly pressed so as to exclude the air.

“ The stripping and stacking of the poles succeed to the operation of picking. The shoot or bind being stripped off, such poles as are not decayed, are set up together in a conical pile of three or four hundred, the centre of which is formed by three stout poles bound together a few feet from their tops, and their lower ends spread out.

“ The produce of no crop is so liable to variation as that of the Hop; in good seasons an acre will produce 20 cwt., but from 10 to 12 cwt. is considered a tolerable average crop. The quality of Hops is estimated by the abundance or scarcity of an unctuous clammy powder which adheres to them, and by their bright yellow colour. The expenses of forming a Hop plantation are considerable; but once in bearing, it will continue so for ten or fifteen years before it requires to be renewed. The Hop is peculiarly liable to diseases; when young it is devoured by fleas of different kinds; at a more advanced stage, it is attacked by the green fly, red spider, and ottermoth, the larvæ of which prey even upon their roots. The honey-dew often materially injures the Hop crop; and the mould, the fire-blast, and other blights, injure it at different times toward the latter period of the growth of the plant.”

It appears from an article in the ‘Genesee Farmer,’ that the culture of Hops is becoming an important branch of husbandry in the State of New-York. A correspondent observes, that “as fine samples have been grown in Orange and Madison counties as in any part of the world. The Hop is considered somewhat precarious; but when the season is good, the profit is very great. The average product may be stated at 700 lbs., though it has reached 1,600 lbs. to the acre; and in the latter case the expenses amounted to sixty dollars. The ordinary, or average price, may be stated at eighteen cents per pound. The profits on an ordinary crop, according to these assumed data, would be about seventy dollars to the acre. It often falls materially short of this, however, from the want of knowledge and care in gathering and drying the crop.

“The quantity of Hops taken to Albany and the neighbouring towns on the Hudson, this year (1834), has been estimated at 2,300 bales, or 50,000 lbs., which, had not many of them been prematurely gathered, or badly cured, would have yielded to the growers ninety or a hundred thousand dollars. But of the 2,300 bales there was not more than 200 bales, we are informed, that ought to have received the denomination of first sorts. Many of them were picked too early, before the matter that imparts to them their value was sufficiently developed; and others were scorched or smoked in curing. This carelessness has seriously affected the character of our Hops abroad, and they are no longer purchased by the Philadelphia brewers. They would soon form an important article of export, if their character was raised by care in their culture and drying, and a rigid inspection.”

The young shoots of both wild and cultivated Hops are considered by some as very wholesome, and are frequently gathered in the spring, boiled, and eaten as Asparagus. The stalks and leaves will dye wool yellow. From the stalk a strong cloth is made in Sweden, the mode of preparing which is described by Linnæus in his *Flora Suecica*. A decoction of the roots is said to be as good a sudorific as Sarsaparilla; and the smell of the flowers is soporific. A pillow filled with Hop flowers will induce sleep, unattended with the bad effects of soporifics, which require to be taken internally.

OBSERVATIONS ON THE WEATHER, AS INFLUENCED BY CHANGES OF THE MOON.

LEST the reader should judge, from my introducing this subject, that I am an advocate for moon-planting, in any other sense than in ascribing the various changes of the weather to the influence of that great luminary, I would here offer a few observations in reference to the practice and prejudices of many persons in choosing the first quarter of the moon for planting such vegetables as yield their produce above the surface, as Cabbage, &c., and the last quarter or wane of the moon for such as grow and yield their produce chiefly in the earth, and below the surface, as Potatoes, &c.

I would first observe, that if the moon has any direct influence over vegetable productions, it must operate in many cases quite the reverse to what these theorists generally expect; for instance, if the earth and weather should happen to be dry in the first week after planting certain species of seed, such would fail to germinate, for want of its most essential nutriment, *moisture*; and in consequence of such seed lying dormant in the earth, until after another change of the moon, if that luminary influences the seed at all, in such case it must be contrary to the objects of the honest planter.

As I deem this argument alone sufficient to shake the foundation of moon-planting, in the sense I have described, I shall at once submit to the reader's attention the following observations and table, from the pen of the justly celebrated Dr. Adam Clarke. Some exceptions, however, may be taken to his rules, with regard to the wind, which does not operate in all places alike. For example, in rainy seasons with us, the wind is generally east, northeast, or southeast, and cold weather is attended by a northwest wind. In England, where these calculations were made, it is in some respects different:

“From my earliest childhood I was bred up on a little farm, which I was taught to care for and cultivate ever since I was able to spring the rattle, use the whip, manage the

sickle, or handle the spade ; and as I found that much of our success depended on a proper knowledge and management of the weather, I was led to study it ever since I was eight years of age. I believe meteorology is a natural science, and one of the first that is studied ; and that every child in the country makes, untaght, some progress in it ; at least, so it was with me. I had actually learned, by silent observation, to form good conjectures concerning the coming weather, and on this head, to teach wisdom to those who were imperfect, especially among those who had not been obliged, like me, to watch earnestly, that what was so necessary to the *family support* should not be spoiled by the weather before it was housed.

“ Many a time, even in tender youth, I have watched the heavens with anxiety, examined the different appearances of the morning and evening sun, the phases of the moon, the scintillation of the stars, the course and colour of the clouds, the flight of the crow and swallow, the gambols of the colt, the fluttering of the ducks, and the loud screams of the seamew, not forgetting the hue and croaking of the frogs. From the little knowledge I had derived from close observation, I often ventured to direct our agricultural operations in reference to the coming days, and was seldom much mistaken in my reckoning.

“ About twenty years ago, a table purporting to be the work of the late Dr. Herschel, was variously published, professing to perform prognostics of the weather, by the times of change, full, and quarters of the moon. I have carefully consulted this table for years, and was amazed at his general accuracy : for though long, as you have seen, engaged in the study of the weather, I never thought that any rules could be devised, liable to so few exceptions. I have made a little alteration in the arrangements, illustrated it with further observations, and have sent it to you that you may insert it, as it has hitherto been confined generally to a few almanacs.”

A TABLE

For telling the Weather through all the Lunations of each Year, for ever.

This table and the accompanying remarks are the result of many years' actual observation ; the whole being constructed on a due consideration of the attraction of the sun and moon, in their several positions respecting the earth, and will, by simple inspection. show the observer what kind of weather will most probably follow the entrance of the moon into any of its quarters, and that so near the truth as to be seldom or never found to fail.

MOON.	TIME OF CHANGE.	IN SUMMER.	IN WINTER.
<i>If the New Moon—the first Quarter—the Full Moon—or the last Quarter, happens</i>			
	Between midnight and 2 in } the morning,	Fair.	Hard frost unless the wind be south or west.
	Between 2 and 4 morning,	Cold with frequent showers.	Snow and stormy.
	" 4 and 6 "	Rain.	Rain.
	" 6 and 8 "	Wind and rain.	Stormy.
	" 8 and 10 "	Changeable.	Cold rain if wind be west.
	" 10 and 12 "	Frequent showers.	Snow, if east.
	At 12 o'clock at noon, and 2 P.M.	Very rainy.	Snow or rain.
	Between 2 and 4 P.M.	Changeable.	Fair and mild.
	" 4 and 6 P.M.	Fair.	Fair.
	" 6 and 8 P.M.	{ Fair if wind NW.,	Fair and frosty if wind N. or NE.
	" 8 and 10 P.M.	{ Rainy if S. or SW.	Rain or snow, if S. or SE.
	" 10 and midnight,	Ditto.	Ditto.
	"	Fair.	Fair and frosty.

OBSERVATIONS. 1. The nearer the times of the Moon's change, first quarter, full and last quarter, are to midnight, the fairer will the weather be during the seven days following.

2. The space of this calculation occupies from ten at night till two next morning.

3. The nearer to midday or noon the phases of the moon happen, the more foul or wet weather may be expected during the next seven days.

4. The space of this calculation occupies from ten in the forenoon to two in the afternoon. These observations refer principally to the summer, though they affect spring and autumn, nearly in the same ratio.

5. The moon's changes—first quarter—full, and last quarter, happening during six of the afternoon hours, *i. e.* from four to ten, may be followed by fair weather ; but this is mostly dependent upon the wind, as is noted in table.

6. Though the weather, from a variety of irregular causes, is more uncertain in the latter part of autumn, the whole of winter, and the beginning of spring, yet, in the main, the above observations will apply to those periods also.

INTRODUCTION

TO

THE MONTHLY CALENDAR.

THE object of this Calendar is to assist the memory of the gardener, and to show him, at one glance, that he may find employment in some of the departments of gardening in every month of the year. The figures refer to the pages in which farther directions may be found, relative to the operations adverted to.

In page 30 it has been shown, that the directions accompanying our Catalogue may be applied to all the climates of the United States, by a *minute observance* of the difference of temperature.

It may be here observed, that the soil is susceptible of cultivation three months earlier in the remotest South, than in the coldest part of our Northern territory; the Calendar, therefore, for March, may be applied to the middle of January in the warmest climates, and to the middle of April in the coldest; some exceptions to this rule must, however, be taken in the Southern States after the three spring months, for the following reasons:

1. As warm weather at the South is of longer continuance than in the North, plantations of those species of vegetables denominated tender in the table, page 26, may be made in the open garden from March to August.

2. Extreme heat being detrimental to the cultivation of many half-hardy vegetables, such as Broccoli, Cauliflower, Cabbage, Celery, Lettuce, Radish, Turnips, &c., these can only be cultivated in perfection in spring and autumn, the latter crops, therefore, should not be planted till August or September. [See note to article Broccoli, page 49; also 52, 72, and 104.]

3. Many of the half-hardy class, as also those designated *hardy* in our table, may be cultivated throughout the winter months, by forwarding such as are required for early spring use, after the summer crops are taken off. [See table, explanation, &c., page 26 to 29 ; also page 115.]

In the Eastern, Western, and Middle States, the annexed Calendar will answer in the order it stands, by applying the directions to the beginning of the first spring month in the warmest climates, and to the latter end in the coldest climates, bearing in mind that where summer is short, the main crops must follow the early in quick succession, with a view to their maturity before winter.

JANUARY.

“PROGNOSTICS foretold most truly some things,
Of summers, and autumns, and winters, and springs ;
By them from the *past* we may all ascertain
The *future*, respecting the winds and the rain.”

It is customary, at this season of the year, with all prudent men, to look around them, and endeavour to ascertain the results of their industry throughout the past year, in order to make improved arrangements for the future. The mere gardener, having no complicated accounts to adjust, may occupy his time to valuable purposes. If he be not a book-reader, he should be a book-keeper, (see page 14.) and he should frequently take a survey of his former practises and those of his acquaintances, with a view to improve on every thing he has done, or seen done. If he consults writers on Horticulture, he should do as the author has endeavoured to do in preparing this little work for the press ; not adopt the mere theory of a subject, nor indulge in speculative ideas, nor even tread in the steps of others, but endeavour to erect his edifice of knowledge upon a good settled foundation. In all his pursuits, whether he attempts to follow the example

of practical and exemplary men, hear lectures, or consult authors on the subject, he should do as every sensible man does at his daily meals, take that which suits him best, and leave the residue for others. If this little work should be considered worth an annual perusal, he may read the General Remarks, in this month, (January,) and make a memorandum of such things as may be obtained in moments of leisure, in preference to putting it off till it is wanted. I shall endeavour to make my Calendar serve as an index to the book, and in pursuit of my object, shall begin at the General Remarks, page 13, which suggest, that if a man has a garden to form, he will require fencing materials. If these should be already at hand, every gardener should provide manures, ingredients for the destruction of insects, drilling machines, and other tools; poles or rods for the support of Peas, Beans, or other climbing plants he may intend to cultivate; and if he intends to use hot-beds, or forcing-frames, he should make arrangements to get compost and heating materials, in time for the work to be performed in the next month. If he depends on this book for information, he may read the General Remarks, from page 13 to 30; and also from page 112 to 122, on Forcing Vegetables.

FEBRUARY.

"A cold, sour autumn, they sternly maintain,
A long, severe winter will bring in its train;
If summer and autumn be both dry and warm,
Calm opens the winter, it closes in storm."

ALTHOUGH stern winter, with its ice-bound chains, exerts its influence over the soil, the gardener may find employment preparatory to commencing his operations of ploughing and planting, as the year progresses. Perhaps the most important business at this season is to collect plenty of manure; next to this, the gardener, who intends to raise early plants

for forcing or otherwise, should see that his hot-bed frames are in good repair and ready for use; he should also repair his sashes, and make straw mats with which to cover them. In preparing dung or other heating materials for hot-beds or forcing-pits, let it be kept secure from heavy falls of snow or rain, and frequently turned over preparatory to its being made into a bed. With a view to give all attention to culture as the season advances, the gardener should look over his hardy fruit trees and hardy vines, and commence pruning them, by cutting off all dead and superfluous branches; he may also clean trees from moss and canker, and search for the nests of insects, with a view to destroy them while in a torpid state, to prevent their spreading. If he has trellises, or any implement of husbandry out of repair, he should embrace the most favourable opportunities of putting them in good condition, and of repairing his fences, &c.

Previous to making hot-beds, select a situation that is well protected by a close fence or wall, and not in any way connected with any building calculated to harbour rats, mice, moles, &c., which are very apt to take up their abode in warm dung, to the great injury, and sometimes the destruction, of the beds. It is necessary that the foundation for the beds be dryly situated, and not liable to be inundated with water from melted snow, &c. When all is prepared as directed in pages 112 and 113, begin to sow Cabbage, Egg-plant, Lettuce, and Tomato seed, 112; force Asparagus, 117; Kidney Beans, 119; Cucumbers, 121; plant Peas, 132; Potatoes, 133; sow Radish seed, 134. In cold-beds, well protected, plant Broad Beans, 119; sow Cabbage seed, 54.

After the seed is sown, the beds will require constant attention; cover them up well in cold nights, and give air at all opportunities, taking care to regulate the heat in the beds, as directed under the different heads, from page 112 to 138. If the heat be excessive, it must be decreased as directed in page 116; and if it should become necessary to let off steam in cold weather, care must be taken to cover the apertures

sufficiently to keep out frosty air. Give air at all opportunities to Cabbage, Cauliflower, Lettuce, and such other plants as may be in frames, of last year's sowing.

MARCH.

"If the *sun* appear dim, surrounded with haze,
And his disk ill-defined, and faded his rays;
If white at his setting, of power if shorn,
The signs are all certain, there'll soon be a storm."

THIS month affords considerable employment to an industrious gardener. Manure may be drawn on the ground and distributed in heaps, ready to spread, page 24; and the hot-beds and forcing-frames will require constant attention. Cover them up warm in cold nights, and give additional air as the season progresses, to prevent the plants growing weak, taking care to regulate the heat as directed for the different kinds of vegetables. If any additional frames are to be put down this month, either for forcing or forwarding vegetables, they should be attended to in time, as directed.

In order to afford time for cultivating the soil as the weather moderates, the gardener should proceed with his business of pruning and cleaning fruit trees, shrubs, &c., at all opportunities; and if any removal be necessary, or fresh trees, shrubs, vines, &c., are required, these things should be obtained and planted this month, if possible. Begin the work of the kitchen garden as soon as the earth can be brought into good condition, and transplant hardy Lettuce plants, 73; dress Artichoke beds, 33; Asparagus, 37; Rhubarb, 91; Sea-Kale, 95; and prepare to make new plantations of these vegetables. Plant Broad Beans, 39; Beet seed, 44; Rape, 47; plant Cauliflower plants under hand-glasses, 51 and 120; sow Cabbage seed, 55 and 112; Carrot, 59; Celery, 60; plant Chives, 66; Cucumber, in frames, 121; sow Egg-plant seed, 66; plant Horse-radish, 69; Leek,

71; Lettuce, 72; plant Melon seed in hot-beds, 132; sow Onion, 78; Parsley, 80; Parsnip, 81; Pepper, 82; plant Peas, 83; Potatoes, in frames, 133; sow Radish seed, 88 and 134; plant Rocambole, 89; Rhubarb, 90; Sea-Kale, 95; Skirret, 97; sow Spinach seed, 99; Tomato, 101 and 112; Turnip seed, 104; prepare to make Hop plantations, 139; sow Herb seed, 106 to 108. Plant esculents for seed, beginning with the hardiest kinds; raise up and plant Cabbage stumps, &c., to produce greens early for the table. In the course of this month, every thing should be forwarded relative to the cultivation and preparation of the ground, by levelling such as may have lain in ridges through the winter, and by manuring and digging the soil generally, preparatory to sowing and planting it early in next month.

In the event of unfavourable weather in March, the planting of some of the articles above enumerated may be delayed until the early part of April; but it should be borne in mind that if the hardiest kinds can be planted early, more time will be afforded to other important business, as the season progresses.

APRIL.

“The state of the *wind* augurs rain, as they say,
When restless in changes, now this, now *that way*,
Or hollow, comes whistling plaintively by,
The rain it betokens is probably nigh.”

This is certainly the most important month in the year for gardening operations. Finish as early as possible the planting of esculents for seed, and see that all plants of the same genus are remote from each other, or they will adulterate. All the soil of a garden should be dug or ploughed this month if possible, and some of the early crops sown last month will require hoeing and weeding.

Great care should be taken to have good sound seed, as

this is a matter of the utmost importance, and for want of which, many are disappointed in their principal crops when too late to sow again. It is also a material consideration to have the best varieties both of seed and plants of their respective kinds. See page 25.

If not done last month, make plantations of Artichokes, 31; Asparagus, 35; Beans, *Vicia faba*, 39; towards the end of the month, plant Beans, *Phaseolus*, 41 and 42; Beet seed, 44; sow late kinds of Broccoli seed, 48; not Cape Broccoli until May; seed of Cabbage for summer use, 55; Cardoon, 58; Carrot, 59; Celery, 60; sow Cress seed, 64; plant Cucumber in frames, 124; sow Endive, 68; plant Horse Radish, 69; Indian Corn, 70; Jerusalem Artichokes, 70; sow Leek seed, 71; Lettuce seed, 72; plant Melon in hot-beds, 132; sow Mustard seed, 76; plant Nasturtium, 76; sow Onion seed, 78; Parsley, 80; Parsnip, 81; plant Peas, 83; Potatoes, 85; Sweet Potatoes, 86; sow Radish seed, 88; plant Rocambole, 89; Rhubarb, 90; Salsify, 92; Scorzonera, 93; Sea Kale, 94; sow Skirret, 97; Spinach, 99; Tomato, 101, 112, and 136; Turnip seed, 104; Turnip-rooted Cabbage in varieties, 56; make Hop plantations, 139. Sow the seed of Angelica, Anise, Basil, Burnet, Boreage, Caraway, Chervil, Clary, Coriander, Dill, Fennel, Pot Marigold, Sweet Marjoram, Patience, Dock, Sorrel, Summer Savory, Smallage, Thyme, Bene, Boneset, Catnep, Celandine, Saffron, and such other Aromatic, Sweet, and Medicinal Herbs as may be required. Also separate and transplant all kinds of Perennial Herb roots, such as Mint, Pennyroyal, Sage, Winter Savory, Tarragon, and Medicinal Herbs in general, as described page 106 to 108. If not done last month, attend to the spring dressing of Artichoke beds, 33; Asparagus, 37; Rhubarb, 91; Sea Kale, 95.

Besides the work of sowing and planting the various kinds of seed above enumerated, all the strongest plants of Cabbage, Cauliflower, and Lettuce, must be taken from the hot-beds and frames, and transplanted into the regular beds in

the open garden. Attend to such other business in this department as may have been left undone last month, and see that the garden be kept neat and free from weeds.

MAY.

"Much *dew* on the grass portends, as all say,
That day which succeeds will be a clear day ;
But when no dew moistens the grass on the plain,
Kind Heaven requites it by sending it rain."

As the warm weather progresses, the gardener should be on the alert, in order to conquer the various kinds of insects. Burn damp litter, stubble, leaves, weeds, &c., near fruit trees, and sow ashes over the ground. Attend to plantations of Cabbages, Cauliflower, &c.; hoe them frequently, and draw earth to their stems; look out for and destroy grub worms, caterpillars, and other insects, 18 to 21; thin out the early plantings of Beets, Carrots, Parsnips, Salsify, &c., and destroy weeds, to prevent their seeding the ground. Plant and sow such kinds of seed as were omitted last month; the sowing of Celery, Leek, Onion, Parsley, Parsnip, Salsify seed, &c., should be attended to without farther delay. Transplant Cabbage, Lettuce, Tomato, Egg-plants, &c., from the hot-beds and warm borders. Plant Beans, 41 and 42; Beet, 44; Borecole, 46; Brussels Sprout seed, 47; Cape Broccoli, 49; Cauliflower, 53; Cabbage, 55 and 56; Carrot, 59; Cress, 64; plant Cucumber, 65; sow Endive, 68; plant Indian Corn, 70; Melon, 74; Water Melon, 75; sow Mustard seed, 76; plant Nasturtium, 76; Okra, 77; Pepper, 82; Peas, 83; Potatoes, 85; Potatoes, Sweet, 86; Pumpkins, 87; sow Radish seed, 88; Squash, 100; Tomato, 101; early in this month finish sowing all kinds of Aromatic, Pot, Sweet, and Medicinal Herbs, 106 to 108. Some of the old hot-beds may be spawned for Mushrooms, but it is best to form new ones. Uncover productive beds once a week,

and gather the produce ; clear them of weeds and wet litter, and put a little dry hay or straw next the bed. Prepare fresh spawn, &c., 125 to 130.

Watering will now frequently be required for newly planted vegetables, both at the time of transplanting, and occasionally afterward, in dry weather, until the roots are established in the soil. Likewise seed-beds recently sown, till the young plants become vigorous.

Weeding must be very diligently attended to, both by hand and hoe ; for as weeds grow luxuriantly, it is necessary to eradicate them before they spread too far, as, by neglect, they will not only impede the growth, but eventually smother the plants.

Toward the end of the month, top such of the English Broad Beans as may be in blossom, to promote the swelling of the pods, as well as their early maturity. [See page 40.]

Those who have young families should not fail sowing some Bene-plant seed, as the plant, by being steeped in a glass of water, produces a glutinous liquid, which is an efficacious remedy for the summer complaint. It may be sown in drills and managed the same as salad or Parsley. [See Herbs, 107.]

JUNE.

"The *sky* dress'd in placid soft redness at night
Portends the next day will be cloudless and bright ;
A fierce angry redness that shoots up at morn,
And tinges the clouds, is a token of storm."

THE principal sowing seasons for general crops may be considered as past, but there are many kinds of seed which may be sown this month ; and the gardener should ascertain the success of his former plantings, in order to make up any deficiencies from failures, before the season be too far advanced. By this time some of the early crops will be cleared off, and such ground as was manured for the early crops of

Lettuce, Radishes, Spinach, &c., will be excellent for late Beets and Carrots. Hoe and thin out all standing crops, and clean vacant ground, to prevent weeds from running to seed. If the ground be dry, frequent hoeing will be beneficial. Use means to destroy insects; read pages 18 to 21 for information on this subject. Plant Kidney Beans, 41 and 42; Beet seed, 44. If the seedling plants of Broccoli, Cauliflower, Cabbage, &c., failed last month, sow again early this month. Water the beds frequently, and sow tobacco dust, soot, ashes, &c., or use the liquid recommended, page 19. Transplant Cabbage, Celery, &c., for summer use; transplant Cardoons, 58; sow Carrot seed in drills, 59; plant Cucumber seed in hills, 65; sow Endive, 68; plant Indian Corn, 70; transplant Leeks, 71; Okra seed may be planted early in this month, 77; plant Peas, if dry weather, soak them five or six hours in water, 83; plant Potatoes, 85; Potatoes, Sweet, 86; Pumpkin seed, 87; sow summer Radish seed, 89; plant Squash, 100.

As the herbs come into flower, they should be cut on a dry day, and spread in a shady place to dry for winter use, 108. Conduct Hop vines to the poles, and when they have reached the top, nip off the tops to strengthen the stems, 110.

Hoe between the Artichokes, and in order to have the main top fruit attain its full size, detach the small suckers, or lateral heads. [See page 34.]

Early Cauliflowers, which will now be progressing toward maturity, must be watered in dry weather; and as the heads begin to exhibit themselves, break down some of the large leaves over them to protect them from the rays of the sun, and from rain, 52.

Keep Asparagus clear of weeds, and also Onions; and give those beds that are to stand for ripening, a final thinning, as suggested in page 78.

JULY.

"When *flowers* toward evening their blossoms expand,
And bask in the sunbeams, there's no rain at hand ;
But when they close up as if conscious of fear,
They augur its coming—it no doubt is near."

THIS is a very important month for transplanting Cabbage, Cardoons, Celery, Endive, Leeks, Pepper plants, &c., for full autumn crops. Prepare trenches for the Celery plants beforehand, in order that they may be ready to catch the rain. Leeks may be transplanted in dry weather, by first steeping the roots in mud, and Cabbage plants too, if there be the least moisture in the ground when it is freshly turned over. As grub-worms are apt to devour Cabbage plants early in this month, those persons anxious to transplant any quantity, may dip the roots in fish oil, and then dry them in plaster of Paris, which will not only annoy the worms, but prove beneficial as manures, 19 and 20. If transplanting in general be delayed to the middle of the month, grub-worms will be harmless, 55.

If Beets and Carrots have failed, the seed may produce good roots by autumn, if planted early in the month; plant Beans, 41; Cabbage seed may be sown now for Collards, 57; plant Cucumber seed for picklers, 66; sow Endive seed, and transplant the former sowing, 68; if Peas be planted now, they should be soaked in soft water five or six hours, 83; Potatoes may be planted early in this month, 85; and Pumpkins, if not done last month, 87. Sow summer Radish seed in drills, 89; sow Turnip-rooted Cabbage seed, in varieties, 96; this is a good season for Ruta Baga, or Russian Turnip, 105; and the common kinds of Turnip seed may be sown toward the end of this month, 101. Attend to plantations of Hops, 140; whatever herbs may be required for winter use, should be cut off and dried as they come into flower; Burnet, Chervil, Fennel, Mint, Parsley, Sweet Marjoram, Tarragon, Thyme, Winter and Summer Savory, may all be cut this month, 106 to 108.

The business of sowing and transplanting will be more successful if done in moist or showery weather, or on the approach of rain, or immediately after, especially for precarious seed, and young seedling plants. Attend to the Mushroom beds, and give light waterings, or expose them to warm moderate showers occasionally, 130.

AUGUST.

"When *clouds* slow dissolve, as if turned into air,
And vanish from sight, the next day will be fair;
But when, in succession, they darker appear,
With watery aspect, then know rain is near."

THE planting season being nearly over, now is the time to hoe around the plants and clear the ground of weeds and stubble. Dig or plough vacant ground ready for fall Turnips, Spinach, Shallots, Feticus, &c. As the ground for the latter crops may require manure, it will be greatly improved if ploughed before the manure is drawn on, which should be afterward spread and ploughed under.

Plant Beans for picklers, 41; sow Cabbage seed for Collards, 57; earth up Cardoons, 58; do. Celery, 62; sow Corn Salad, or Feticus seed, 63; the early kinds of Cucumber may produce picklers if planted early in this month, 66; transplant Endive, and prepare to blanch the early plantings, 68; sow Lettuce for autumn use, 73 and 125; sow Onion seed to stand the winter, 78; Peas may be planted thus late, if desired, 83; sow summer Radish seed, 89; prepare for planting Shallots by the end of this month, 97; sow Turnip seed for full crops, 101; attend to such herbs as were not gathered last month; cut off and dry Sage, and other late herbs, 106 to 108. Hops will be ripe this month; choose a dry season for gathering them, and attend to them as directed, page 140; this is a good season for preparing to make Mushroom beds, in close sheds, cellars, or pits; if the mate-

rials be gathered this month, indigenous spawn may be collected next, but those that can procure spawn may make the beds at any time, or they may pursue Mr. Nichol's plan, 128.

Artichokes will be in perfection this month, and should be cut for use as soon as the scales of the head expand, and before they open in the heart for flowering; and as you cut them, break down the stems to promote the growth of root offsets, 34. In dry weather hoe and plough between such vegetables as may have been planted in rows, which will not only destroy weeds, but encourage the growth of the plants. Frequent hoeing in dry weather will be more beneficial than the watering-pot.

Early sown Onions, being now of mature growth, and full bulbed, should be pulled up in dry weather and exposed to the sun to ripen; frequently turning them, that they may harden equally for keeping; then clear them from the gross part of the stalks, and loose outer skins, earth, &c., and remove them to a place of shelter, 78.

Continue to gather seed of all kinds as they ripen, and prepare vacant ground for late crops; such as Spinach, Shal-lot, Onion, Fetticus, &c., 98.

SEPTEMBER.

"Light vapours o'er valleys and rivers at night,
Foretokens the next day salubrious and bright;
Especially when they at morning appear
To rise up the hill sides, and vanish in air."

ALTHOUGH the sowing season is nearly over, the crops on the ground require attention constantly. Endive may still be transplanted for winter use. Hoe Cabbage and other vegetables, and attend to the earthing of Celery as it progresses in growth. Tie up Endive plants for blanching, 68; sow Rape, 47; Cauliflower seed, 51; Cabbage, 54; Corn

Salad, or Fetticus, 63; Cress, Rape, &c., every ten days, for a salad, 64; sow Mustard, for the same purpose, 76; sow Lettuce, 73 and 125; Onion, to stand the winter, 78; Radish, for fall use, 89; plant Shallots, 97; sow Spinach seed every week or ten days, 98; Turnips will sometimes come to maturity if the seed be sown the early part of this month, and those sown last month will need hoeing as they progress in growth, 104.

Continue to gather, dry, and pack Hops as they ripen, 140; also all Aromatic, Sweet, and Medicinal Herbs, 108; this is a good season to make Mushroom beds in sheltered situations; they may be spawned with indigenous or artificial spawn, as may be most convenient. [For directions to preserve spawn, &c., see pages 126 and 127.]

Toward the end of this month, or early in the next, is a good season to increase all kinds of herbaceous plants, by parting the roots, but it should be done in cloudy or wet weather; at the same time, such herbs as were raised from seed sown in the spring, may be transplanted into separate beds or borders, 106 to 108.

In this month must be finished all the principal sowings and plantings necessary this year; on this account such ground as is intended for principal crops next year, should be well manured previous to planting it. [See Spinach, 98.]

Cucumber vines should be looked over, and the fruit gathered as it becomes fit for pickling, as a very slight frost will destroy Cucumbers, 66.

OCTOBER.

"A warm, open winter doth often succeed
A hot and dry summer, by all 'tis agreed;
A hard, frosty winter its rigour retains,
And holds gentle spring in its cold icy chains."

THE principal winter crops being planted, it will be necessary to prepare for maturing and gathering some of the fall crops. Weed out Fetticus, Spinach, &c. Hoe and earth up Celery; do it in dry weather, and not even while the dew is on it, 62. Toward the end of the month, frames must be provided for the protection of Parsley, Lettuce, and of such Cabbage and Cauliflower plants as were raised from seed sown last month. Begin to dig and secure all kinds of vegetables soon enough to get the whole placed away before the end of the next month. Take up Potatoes and bury them in pits, so as to secure them from wet and frost, or put them in a warm cellar. Proceed to take up other roots; begin with the most tender kinds, or do that which is required to be done in dry weather, while it is so. Collect Pumpkins and winter Squashes, and expose them to the wind and air on a dry bench, or ledge, before they are stowed away. Dig up Beets, and secure them in pits, or pack them in sand in a cellar.

Aromatic, Pot, and Medicinal Herbs, should now have a thorough cleaning and dressing; by destroying all weeds, cutting away all decayed stalks, digging between such plants as will admit of it, and spreading earth over others, as suggested, page 108.

Tie up full-grown plants of Endive every week in dry weather, for blanching in succession, as required, 68.

Horse-radish may now be dug for use as wanted, by trenching along each row to the bottom of the upright roots, leaving the old stools for future production, 69. Jerusalem Artichokes may be dug up for use, or to preserve for winter consumption, 71.

NOVEMBER.

“When *nuts* are but few, and they small and hollow,
A cold and wet harvest, there’s no doubt, will follow ;
But when they are plenty, and good, ’tis agreed,
A rich, golden harvest is sure to succeed.”

ENDEAVOUR to avoid having your garden products frozen fast in the ground. Begin in good earnest to secure them ; in fine weather dig up Beets, Carrots, and as many Skirret, Salsify, and other hardy roots as will be required for winter use, and pack them close together in pits ; give them a coat of straw, and afterward heap on as much earth as will keep out the frost, or stow them in a cellar. Toward the end of the month, Turnips may be secured in the same way. Take up Celery in dry weather, and strike it in close together against a ridge, which should be previously formed in a straight line, about a foot above the level of the surface ; throw up earth from the trench sufficient to cover them about an inch, and then plant row after row as close and upright as it can be placed, with just sufficient earth between every row to keep the roots and stalks from touching each other. The whole being covered up with earth, some long dung or litter may be thrown over it, sufficient to keep out the frost ; and by heaping a good layer of manure against the last row of Celery, it may be taken out at any time in the winter for use. Some erect a board shed over to protect it from wet ; a small quantity may be kept in a cellar. Cabbage must be taken up and laid in rows against a ridge, so as to form a square, compact, close-growing bed, the roots and stems being buried up to the lower leaves of the Cabbages. The beds may afterward be covered with straw, or a temporary shed may be erected over them. Cabbage will keep for some months in a cellar, if connected with their roots. For the management of Broccoli and Cauliflower, see articles, pages 48, 51, and 120. Borecole, Brussels Sprouts, and Col-lards, may be taken up and stowed away like Cabbages.

Cardoons may be laid in like Celery, or preserved in sand in a cellar. Leeks may be taken up and laid in rows close together against a ridge, and covered up as far as the lower leaves. If the last row be protected from frost by a coat of stable dung, they can be taken out when required for use. Corn Salad, Spinach, and Lettuce, may be protected by a covering of straw, salt hay, or cedar brush. For the management of Artichoke beds, see page 32; Asparagus, 37; Rhubarb 91; Sea-Kale, 95.

Dig up roots of Horse-radish in the manner recommended last month, to preserve in sand or pits, for use when the ground is frozen or ice-bound. Do the like by Jerusalem Artichokes, which are now in their full perfection. At the same time take up as many Parsnips and other hardy roots, as will be required for use the next three months. Spread short horse dung over the Onions that were sown in August and September, which will protect them through the winter.

DECEMBER.

"A wet, sultry summer, prognostics affirm,
A boist'rous autumn will bring in its turn;
A cold, sour autumn and summer portend
A winter severe from beginning to end."

If all was not done as directed last month, there is no time to be lost. Every thing that needs protection should now be attended to, and if the weather continues open, some of the ground may be ploughed or trenched, to receive the benefit of winter frosts. Collect all your Pea-sticks and Bean-poles together, and place them under cover to prevent their rotting. Turn over compost heaps, and provide manure for another year.

Those who are desirous of having Cucumbers or Melons early in the ensuing spring, and have not the convenience

for forcing them in the ordinary way, may dig a few grass sods or turfs, before it freezes hard, and stow them away out of the reach of frost, through the winter. These being placed on the top of a hot-bed, in March, or early in April, with the grass downward, and Cucumber or Melon seed planted in the earthy part thereof, early plants may be produced, which can be removed with the turfs without disturbing their growth, and cultivated either on the ridge system, as recommended in page 132, or in the open ground, provided they can be kept growing in frames until settled warm weather. This is also an excellent plan in early forcing, as it saves trouble as well as risk in transplanting seedling plants into the fruiting beds.

If not done last month, dress your Artichoke beds, and cover them as recommended in page 32. Defend Mushroom beds with dry straw, or long stable litter, and cover such as may be exposed, with mats, as security against cold. In all moderate weather during the winter, give air to Cabbage, Cauliflower, Lettuce, and such other plants as may be in frames, being careful to cover them every night with mats, boards, litter, &c., as necessity may require.

As the year is drawing to a close, I would solicit the gardener to review the results of his practice throughout the past season, that he may be able to judge how to act for the future.

In sketching a plan of his garden for the next year, he ought to make provision for a full supply of such vegetables as are best calculated to sell, and yield a fair profit; with this object in view, I would suggest that he take a retrospective view of his previous management, and also of the directions given in the preceding chapter relative to the preparation of the soil, by ploughing, trenching, pulverizing, manuring, &c., as circumstances may require; bearing in mind, that although clayey soils may be benefited by fall ridging, light sandy ground should lay flat through the winter.

TO THE PEOPLE

OF THE

UNITED STATES OF AMERICA.

FELLOW-CITIZENS :

AN application having been made to your Representatives in Congress to vote a sum equal to five cents from each individual in the United States, OR ABOUT A MILLION DOLLARS OF YOUR RESOURCES, to the promotion of an improved system of "*Terra-culture*," as described in Senate Document No. 23, of the third session of the 25th Congress, I hereby direct your attention to a few extracts taken from the applicant's preamble ; copies of which were forwarded to each member of the 26th Congress, in session, November 30, 1839, by *Russell Comstock*.

From the Poughkeepsie Eagle, of January 25, 1840.

PRESERVATION OF FRUIT TREES, PLANTS, &c. GREAT DISCOVERY.

"To the Hon. Perry Smith, Chairman of the United States Senate Committee on Agriculture of the 25th Congress. "With the consent and by the advice on the 23d inst., of the chairman of the United States Senate Committee on Agriculture of the 25th Congress, I forward to each member of the 26th Congress the accompanying document dated the 14th inst.; the object is *to show you some of the proof* that a discovery of vital importance to civilized man has been made, which in several letters from different members of the present and last Congress is valued at HUNDREDS OF MILLIONS OF DAYS' LABOUR, AND WORTH MORE THAN ALL THE DISCOVERIES OF THE PRESENT AGE COMBINED—THE APPLICATION OF STEAM NOT EXCEPTED.

"For what purpose would all the owners of the public lands more freely or gratefully consent to give one hundredth part of those lands, or the proceeds thereof? Would they not be grateful to those members of Congress, who assist in giving the owners of the public domain the desired information, and reverence them as benefactors of human kind.

"For the honour of the Republic, for the honour of the age, and for the interest and comfort of the living, as well as the unborn, let not that discovery which may cause two seeds to ripen where one now does, which prevents the premature death of all cultivated trees, which has been searched for in vain during the history of all civilized society, die with the discoverer for want of the action of the United States Congress."

Our patriotic discoverer "claims the following five discoveries as his, besides other discoveries which are stated in his memorial to the 25th Congress :

1st. "That various diseases, universally supposed to be destructive to plants are only symptoms that a particular error in cultivation has been committed; and that many other injurious effects have been produced by the same error, which are attributed to other causes.

2d. "That the error is UNIVERSALLY COMMITTED, to a greater or less extent, throughout the States, and that he has seen an excess of it wherever he has been, which is in the Atlantic States, from Georgia to Massachusetts, inclusive.

3d. "That the PEACH and NECTARINE are more easily injured by the error than most other Fruit trees, and the *cause* of their being more easily injured by it; and that this error causes them to be barren, or short-lived.

4th. "That the application of two known laws in nature demonstrate the reality of his discovery and its application to the whole vegetable kingdom; and that by them, his discovery, (if publicly known,) must be perpetuated, and his practice more easily introduced: and that by these two laws the occasional success of common remedies is explained.

5th. "That the said error is the obstacle which has discouraged experimenters, and lamentably retarded improvements in the science and practice of agriculture; and that he has discovered facts and made himself acquainted with knowledge sufficient to reduce them to practice."

We are farther informed, "that it is neither climate, nor soil, nor insects, nor worms, that are the cause of many of the disastrous effects that have been attributed to them, but that those effects are produced by error in cultivation, which diseases the smallest plant or largest tree."

Our modest and patriotic fellow-citizen admits, in the course of his preamble, "that the practical part of his discovery is so EXTREMELY SIMPLE and economical, that it costs no more to prevent the diseases than it does to produce them; and that it is so different from the established theories and habits of the people, THAT UNLESS A LARGE AMOUNT BE APPROPRIATED, many will be unwilling to try it, and therefore the PUBLIC GOOD seems to require that a large amount should be appropriated" He moreover asserts, that "there are two known laws in nature, by which the reality of his discovery, and its application to the *whole* vegetable kingdom, are demonstrable in less than thirty words."

That this invaluable *secret*, whatever it may be, is not strictly speaking a new discovery, is demonstrable by numerous living witnesses which have inhabited the fields of the old world for over a thousand years; and our discoverer freely admits, and in very emphatic language, that there are thousands of trees in our own country on which, what he terms "the common error" has never been committed; and also, that several of the fifteen gentlemen to whom he communicated his secret, "*confidently for ever*," have some such trees on their own domains.

Hear him—"The Senator from Missouri, (Mr. Linn,) said, that the most flourishing and healthy Peach tree in his possession had never had what I call the common error in cultivation committed upon it."

"The Senator from Pennsylvania, (Mr. McKean,) said, that he had long supposed that what I call the common error was an error, but that he had no idea of such extensive evils arising from it."

"The Senator from Maryland, (Mr. Spence,) said, that in his district it was a universal custom to commit what I call the common error in cultivation, on the fruit trees, and that it was common to have no Plums perfect

and free from worms, excepting on a few of his, on which the error had not been committed for twenty years, if ever; and those few (four) continued to bear abundantly annually; that he had no recollection of ever seeing an imperfect wormy Plum on either of these four trees, but that he had never supposed that to have been the cause of their perfection."

The Senator from South Carolina, (Mr. Calhoun,) to whom I am indebted for pointing out one symptom of the error, and for a valuable suggestion in the culture of plants, said, "while examining the defective trees around the Capitol, that the principle when exhibited was very plain and simple, that it was philosophical, and in his opinion it could not be neglected without injury to the health and growth of trees and plants, and deserving of public patronage."

"The Vice President of the United States, (Mr. Johnson,) said, that my discovery was perfectly consistent with the laws of nature; and (when observing a few trees near the Capitol, which had been injured by the error, and were recovering,) farther remarked, that my theory was essentially correct and obvious to the most superficial observer."

"The member from New-York, (Mr. Jackson,) said, that he had reared an orchard on which he had carefully avoided an excess of what I call the common error, and that it had been admired as the most flourishing and fruitful orchard in the neighbourhood; and that he had recently seen a field of Indian corn, which yielded more than one hundred bushels of shelled grain to the acre, in which an excess of the error had been avoided, while the success was attributed to quite a different cause."

From the preceding extracts, it is evident that this *inestimable treasure* lays near the surface; and from the disclosure having been communicated to rational and intelligent minds, it is preposterous to expect that those gentleman *can*, in the pursuit of their rural avocations, act directly contrary to knowledge and sound judgment; they must, therefore necessarily and unavoidably communicate the *secret* by their example, which will eventually disseminate in proportion as mankind take an interest in the merits of the alleged discovery.

But lest the full benefits of this invaluable remedy should be withheld from the community for want of the action of the United States Congress, I have submitted an exposition of *my views* of the particular points adverted to in the preamble, which may be found under the heads, Nectarine, Peach, and Plum, pages 91, 98 and 124 of the third part of the present edition of the Young Gardener's Assistant; and I would furthermore remind my readers that the directions heretofore given in this and previous editions of the work are in strict accordance with the same doctrine; and that although the error alluded to is admitted to have been very generally committed, I am not aware that any writer has ever taught or encouraged the error, either direct or indirect; I confess, however, that I have been induced to expatiate on this *malpractice* in horticulture from the subject having elicited the grave consideration of enlightened legislators of these United States.

And lest these my voluntary disclosures should prove to have no bearing on the alleged discovery, I would prepare the public mind for its reception by an exhortation to TEMPERANCE AND MODERATION, as the *only safe course* that can be considered applicable to the cultivation of *all the varied species* of plants, which comprise "the whole vegetable kingdom." In

articles page 26 of the first part, and pages 16, 28 and 97 of the second part, I have shown that the various species of plants which occupy our greenhouses, gardens, and fields, *require each their peculiar aliment*—they having been collected from all the diversified regions, climates, and soils through earth's remotest bounds; they consequently comprise natives of mountains and rocks, as well as of plains, valleys, and water courses. The most essential aliment for natives of warm climates and dry soils being HEAT, artificial means are used in cool seasons, and unpropitious climates to produce it. Natives of temperate climates require salubrious AIR, hence they are cultivated to the greatest perfection in our Northern States in spring and autumn; and in our Southern States in the winter; see page 147 of the first part; and natives of humid climates, as also amphibious plants in general, require a more than ordinary share of MOISTURE, and grow best in wet soil; but these THREE ELEMENTS collectively constitute the food of plants in general, and should be judiciously imparted to the various species, in due proportions, according to circumstances. See pages 49, 64 and 67 of the first part, for a more concise view of this subject. I have also shown that the roots of various species of plants require each their peculiar aliment, which is not to be found in all descriptions of land; this is demonstrated by roots of trees being frequently discovered spreading beyond their ordinary bounds in quest of salutary food.

Although it has been admitted that excessive deep planting of trees and plants is injurious, and in many cases fatal to their very existence, it does not follow that *all* annuals and biennials are injured by the same means; on the contrary, the earthing up of particular species of plants in a late stage of growth is calculated to promote early maturity, which constitutes the most essential art in gardening for the market; because the earliest crops are always the most profitable. It is moreover a necessary practice in climates where the seasons for gardening are short—as without such practice, many kinds of vegetables could not possibly be matured in due season for gathering before winter.

I would here take the opportunity of proving this last position, by reminding the reader that the effects of deep planting, the Peach tree for instance, is discoverable soon after the error is committed, by its fruit ripening prematurely, and this is often the case for a year or two prior to its final decease, and should operate as a salutary lesson against planting *perennial* plants and trees too deep.

In conclusion of this article, which is intended as an appendage to my works on gardening, I would urge gardeners and cultivators to consult the operations of nature in all their rural pursuits; and with a view to aid them, I subjoin the following rules, which are farther illustrated under the different heads:

1. In transplanting fruit trees, let the collar, or that part from which emanate the main roots, be near the surface. A medium sized tree may be planted an inch deeper than it was in the nursery bed; and the largest should not exceed two or three inches. See pages 93, 101 and 125 of the third part of the present edition of the *Young Gardener's Assistant*.

2. In the cultivation of such plants as are transplanted, or grown in hills or clusters, as Indian Corn, &c., keep the earth loose but level around them in their early stages of growth, by frequent hoeing, ploughing, or culti-

vating; and to promote early maturity, throw a moderate portion of earth about the roots and stems at the last or final dressing.

3. In the sowing of seed, remember that IN UNITY THERE IS STRENGTH, and that from the germinative parts of a seed being weak and diminutive, it cannot be expected to perforate through the soil, solitary and alone. To insure a fair chance plant your seed moderately thick, and thin out the surplus plants while young. In planting seed in drills, which is the most eligible plan, the size of the seed and strength of its germ should be considered; large seed, producing vigorous roots, require deeper planting than diminutive seed, producing delicate roots and slender stalks.

4. In the choice of compost for exotic or greenhouse plants, imitate the native soil of each peculiar species as nearly as possible, by a judicious mixture of *maiden earth*, loam, sand, leaf, swamp, and rock mould, decomposed manures, and such other composts as are recommended under the different heads. Remember, that although strong manure is essential to the growth of some plants, it is poisonous to others. PURSUE, THEN, A MEDIUM COURSE. From your soil not being too stiff or too light, too rich or too poor, too cool or too warm, too close or too porous, if not positively salutary and congenial to all, it must render the situation of each endurable. I again repeat, that temperance in the use of aliment, is as essential to the welfare of the vegetable family as it is to the health, happiness, and longevity of mankind.

T. BRIDGEMAN.

New-York, March 4, 1840.

✂ Since this address has been in press, I have seen another article in the *Poughkeepsie Eagle*, dated February 29, 1840, wherein our *modest and patriotic discoverer* gratuitously pronounces *his knowledge* as superior to that of "*all Botanical and Agricultural known writers!*" As I have anticipated the merits of this second *valuable* discovery in my books, I have nothing more to say than to remind the reader that this uncalled for attack on the brethren of my fraternity, fully justifies not merely the publication, but the most general circulation of these my voluntary disclosures.

RETROSPECTIVE VIEW.

THIS summary view of estimates is annexed, in order to aid the Seedsman and Gardener in making out a bill of seed for the purpose of planting any given quantity of ground, under the regulations suggested in the Vegetable Department of the Young Gardener's Assistant, to which the reader is referred for a more concise view of the subject.

	Page.
Artichoke; an ounce of seed will produce 600 plants, - -	31
Asparagus; one ounce will be sufficient for 1000 plants - -	35
Beans, English Dwarf; one quart of seed will be required for every sixty feet of row, - - - - -	40
Beans, Kidney Dwarf; one quart of seed will plant from 350 to 400 hills, or from 230 to 260 feet of row, - - - - -	42

	Page.
Beans Pole, or Running ; one quart of Lima, or large running Beans will plant about 300 hills, or 250 feet of row, - - - -	43
Beet ; one ounce may be allotted for every perch, or pole, - - -	45
Borecole, or Kale, an ounce will produce 4000 plants, - - -	46
Broccoli ; one ounce is sufficient for 4000 plants, - - - -	50
Cauliflower ; an ounce of this seed will produce 4000 plants, - -	53
Cabbage ; one ounce will produce 4000 plants, - - - -	55
Cardoon Artichoke ; an ounce will produce 600 plants, - - -	53
Carrot ; half an ounce may be allotted for every pole, - - -	59
Celery ; an ounce of seed will produce 10,000 plants, - - -	60
Corn Salad, or Feticus ; one ounce of seed will sow about two poles of ground, - - - - - - - - - - - - - - - - -	63
Cucumber ; one ounce of seed is sufficient for 200 hills, - - -	65
Egg Plant ; an ounce of seed will produce 4000 plants, - - -	67
Endive, or Succory ; an ounce will yield 5000 plants, - - -	68
Leek ; one ounce of seed may be allotted for 3000 plants, - - -	71
Lettuce ; an ounce will produce, say 10,000 plants, - - -	73
Melon ; one ounce of seed will produce from 120 to 150 hills, - -	74
Melon, Water ; an ounce will plant from 40 to 50 hills, - - -	75
Onion ; one ounce of seed may be allotted for every pole, - - -	78
Parsley ; two ounces may be allowed for three perches, - - -	80
Parsnip ; two ounces may be allotted for three perches, - - -	81
Pepper ; one ounce of seed will produce 3000 plants, - - -	82
Peas ; one quart will plant from 150 to 200 feet of row, - - -	84
Potatoes ; from twelve to sixteen bushels may be allotted for an acre, -	85
Potatoes, Sweet ; half a peck of seed, properly managed, will produce 15 bushels, - - - - - - - - - - - - - - - -	86
Pumpkin ; one quart of field Pumpkin will plant from 500 to 600 hills, and one ounce of the finest kinds will plant from 50 to 80 hills, -	87
Radish ; four ounces will do for every three perches, if sown broadcast, and about half the quantity if sown in drills, - - - -	89
Salsify ; two ounces of this seed will plant three perches, - - -	93
Shallots ; four bushels of bulbs will plant forty poles, - - -	98
Spinach ; if cultivated in drills, four ounces will plant five perches of land. If broadcast, it will require double the quantity, - - -	99
Squash ; an ounce of seed will plant from 50 to 100 hills, according to sorts and size, - - - - - - - - - - - - -	100
Tomato ; one ounce of seed will produce 4000 plants, - - -	101
Turnip ; one pound of seed is sufficient for an acre of land, - -	105

QUANTITY OF GRASS SEED SUITABLE TO THE ACRE.

Clover, sown alone, - - -	12 pounds.	Orchard Grass, - - -	2 bushels.
Timothy, - - - - -	1 peck.	Rye Grass, - - - - -	2 bushels.
Herds Grass, - - - - -	1 bushel.	Lucerne, - - - - -	8 pounds.

For a pasture for grazing, the following mixtures of seed would be found excellent, viz : 6 pounds of clover seed, 1 peck of herds grass, and half a bushel of Orchard grass seed—or 6 pounds clover, half a bushel of rye grass, and half a bushel of tall meadow oat seed.

COMMENDATORY NOTICES.

"The first edition of "The Young Gardener's Assistant" has been favourably noticed in France:—"One of the leading articles of the *Annales de l'Institut Royal Horticole de Fromont*, is a long notice of "The Young Gardener's Assistant," by Mr. Thomas Bridgeman, of this city. The editor, Le Chevalier Soulange Bodin, speaks of the little work in very commendable terms."—*New York Farmer*.

Extract of a review of this work in the Magazine of Horticulture, Botany, &c., published by Hovey & Co., Boston:

"The work is written in plain language, easily to be understood by the young beginner in gardening, who will find it a great help; and its value, even to the experienced person, is by no means of an ordinary character. IT IS ADAPTED TO OUR CLIMATE, and unlike compilations from English works, the novice is not led into disappointment by following the rules there laid down, as he generally is, when following the advice of the latter. We repeat, that as far as the book pretends, IT IS WORTH ALL OTHERS OF A SIMILAR CHARACTER THAT HAVE EVER BEEN PUBLISHED IN THIS COUNTRY; and its cheapness should place it in the hands of all new beginners."

"No work ever published has been so studiously written to give plain useful information. By being arranged in the form of a catalogue, you can turn in a moment to any name you desire, where the time of sowing, depth, soil, after treatment, &c. &c., is clearly defined. The Calendrical Index, giving a summary of work for every month, is itself worth the whole price of the book, and must have cost the author much research and laborious thought. Mr. Bridgeman is not a theorist, but is in the daily practice of what he writes, and of course well qualified to direct all beginners in the profitable and delightful employment of cultivating a garden, 'a profession and an employment for which no man is too high or too low.'"—*Genessee Farmer*.

"It will, we are persuaded, be found, what the writer intends it shall be, 'generally useful to such as may wish to superintend, or take the management of their own gardens.' Mr. Bridgeman is a gardener himself, in the Bowery road, and his directions are therefore applicable to our climate—an advantage of no little moment."—*American*.

"Among the plants for the cultivation of which 'The Young Gardener's Assistant' contains directions, are a number of culinary vegetables not generally introduced in the United States. The introduction and successful cultivation of useful foreign vegetables add to the resources of our country. We recently saw, for instance, in Mr. Bridgeman's garden, several varieties of Broad Beans, *Vicia faba*, in a most vigorous and thrifty growth. They occupied a clayey spot of ground that was not suitable so early in the season for any other vegetable. They put forth a beautiful blossom, and would serve as an ornament for the flower garden."—*New York Farmer*.

"BRIDGEMAN'S GARDENER'S ASSISTANT.—The fourth edition of this useful little manual is published, and is rendered of increased value by the addition of several matters not contained in either of the former editions. Among these is a short and convenient calendar to assist the gardener's memory."—*Evening Post*.

"No work on the subject of Kitchen Gardening ever published in this country has met with so very general approbation and extensive sale. Mr. Bridgeman is well known as one of our best gardeners, and writes from his own experience."—*Daily Express*.

"That work which teaches us how to create and to improve this most innocent and useful source of pleasure, is surely worthy of applause and patronage; and such we consider 'The Young Gardener's Assistant.'"—*Morning Herald*.

"The work is calculated to be of immense service to those engaged in Agriculture, 'far from the busy haunts of men,' and to the disciples of Flora, in the city. Mr. Bridgeman is a practical gardener and seedsman, and has lived many years on both sides of the Atlantic."—*Old Countryman*.

"From what we gather from the tenor of Mr. Bridgeman's book, we should suppose that he paid but little attention to the mere *on dits* or *dictums* of any, but that he pursued that course which his judgment pointed out; and in this particular, we value his book—leading the young gardener to depend more on his own judgment than on the rules of custom."—*American Farmer*.

"All those who are desirous of a work on the subject of Gardening, and one which will convey the best information on the management of Hot-beds, Asparagus beds, best mode of raising all sorts of Esculent Vegetables, Pruning, Grafting and Budding Fruit Trees, Training the Vine, Preserving the Fruit from Mildew, &c., should procure this. No work on the subject ever published in this country has met with half as extensive a sale, or decided public approbation, as this valuable compendium. Mr. Bridgeman fully understands the subject on which he treats. The very rapid sale of the eight former editions is quite a sufficient recommendation."—*G. C. Thorburn, in the Evening Star*.

"We can assure gardeners and farmers that they will in times and ways almost without number, be amply compensated by purchasing the book, Mr. Bridgeman bestows great labour on his productions of the pen, not only as to practical matter of fact, but to the various excellences of style particularly to clearness, and the avoiding a redundancy of words. The amount of useful information in the book constitutes its value; and all this information is adapted to this country, and its climate and its soil."—*American Gardener's Magazine*.

"From the cursory examination we have been enabled to give 'The Young Gardener's Assistant,' we should judge that it embraces a greater amount of practical information, applicable to our climate, than can be found in any similar work. The list of fruit trees has been selected from the best authorities, both foreign and American, and is sufficiently extensive for any cultivator in this country."—*Newark Daily Advertiser*.

"The author is an experienced practical gardener and seedsman, and his book is an excellent manual and guide for the *beginner*, whether old or young, in horticultural pursuits."—*Gazette*.

"From the systematic arrangement of the parts, under appropriate heads, and the plain and practical nature of the instructions, it must be an invaluable manual for those who may wish to superintend the management of their own gardens."—*Albany Argus*.

Extract of a letter from Alex'r Walsh, Esq., Lansinburg :

Dear Sir:—You will see by the next month's New-York Farmer, if you have not already seen by the Albany papers, that several copies of the Young Gardener's Assistant have been given as premiums, by the State Agricultural Society. Mr. D. B. Slingerland and myself were on the committee for awarding premiums, and thought your work was deserving encouragement; and that even in this small way we might be of service in bringing it before the public as worthy of being given as premiums."*

"Written with a good deal of practical knowledge of the subject on which it treats. The directions given, the author says, are the result of twenty years' experience, and we dare to say, that though submitted in an unpretending form, they will be found as useful, if not more so, than those in more costly and expensive works."—*Courier & Enquirer*.

"We have undoubted authority for pronouncing this work as worth all others of a similar character that have ever been published in this country, from its adaptation to all the climates in the United States."—*N. Y. Sun*.

"That this is a useful work is evident from the number of editions through which it has passed. There is scarcely any employment in life more pleasing than the cultivation of a Garden with Fruits and Flowers. Those who have the opportunity to indulge themselves in this gratification, we have no doubt will derive much assistance from this publication."—*N. Y. Tribune*.

"Every one that cultivates a garden should possess the work, as it is a complete dictionary for young beginners in the delightful field of Horticulture."—*Working Man's Advocate*.

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* The American Institute has also awarded several copies of this work as premiums for superior specimens of garden products.

author of the discovery a sum equal to five cents from each individual in the United States—or about a million of dollars. Mr. Bridgeman has clearly proved this discovery from his long observation of the course of nature and treatment of Trees and Plants, and which only occupies some four or five pages of the work.”—*N. Y. Commercial*, by G. C. Thorburn.

“THE FLORIST’S GUIDE.—A delightful little book, which we advise every body to purchase—at least every body that has the least liking for the pleasing occupation on which it treats.”—*Courier & Enquirer*.

“The Florist’s Guide,” like its companion, “The Young Gardener’s Assistant,” is a useful work, which every Gardener and Florist may consult to advantage. It gives minute directions concerning plants of various species; the names and characters of each being alphabetically arranged, makes it an invaluable manual for those who may wish to superintend the management of their own gardens.”—*Newark Daily Advertiser*.

“This is one of the best works on the subject ever published in any country: it contains Practical Directions for the Cultivation of Annual, Biennial, and Perennial Flowering Plants, of different classes, Herbaceous and Shrubby, Bulbous, Fibrous, and Tuberos-rooted, including the Double Dahlia, Greenhouse Plants in Rooms, &c. &c.

“A work of the above kind has been long wanted; hitherto, it required an expenditure of some three or four dollars to get any kind of readable directions for small gardens, window gardening, plants in rooms, &c., which, when procured, were so full of botanical foppery, that plain, honest people, after wading through some three or four hundred pages, were as wise as to knowing how to set about their gardening, as when they commenced their book. The present little work obviates all these difficulties. The author is well known as one of our practical gardeners, and it may be truly said he has rendered the ladies in particular (for whom the work was projected) an essential service: the directions for the care of the Camellia Japonica, the Double Dahlia, the sowing and treatment of Annual Flower Seed, &c., are alone worth double the price of the book; so is the Calendarial Index, which, by the untiring industry of Mr. Bridgeman, is made to include in some half dozen pages, more valuable information than is to be found in some ponderous octavos on the same subject.”—*G. C. Thorburn*, from the *N. Y. Commercial*.

“The style is free, and the language appropriate; the plan is judicious, and the contents embrace much well arranged practical information, unencumbered with disquisitions foreign to the object of the work. We very cheerfully recommend it to our readers as a cheap and useful book.”—*Gardener’s Magazine*.

The Florist’s Guide has also been very favourably noticed by the editors of many other very respectable periodicals, as a work eminently calculated to promote a love for the cultivation and correct management of flowers—the study of which, remarks one of these writers, “refines the taste, and imparts just and ennobling views of the wise provisions of nature.”

LINES

SUGGESTED BY THE AWARD OF A GOLD MEDAL TO THE AUTHOR
OF 'THE YOUNG GARDENER'S ASSISTANT,' AT THE FOURTEENTH
ANNUAL FAIR OF THE AMERICAN INSTITUTE, 1841, FOR ITS
GREAT PRACTICAL UTILITY.

BY D. MITCHELL.

AS VALOR'S meed, and Honor's brightest test,
I've seen a MEDAL on a Warrior's breast;
But to my mind it brought sad scenes to view—
The sweeping carnage of red *Waterloo*—
The orphan's tear—the widow's drooping head,
For slaughter'd heroes on false glory's bed—
The earth made desolate, its fruits despoil'd,
By mad Ambition, fearless and unfoil'd!
Not so the *Token* thou hast gained from Peace,
Thou lov'st to see fair Nature's wide increase,
And the "Young Gard'ner," in thy fertile book,
Finds an "Assistant" not to be mistook!
Thine is the pleasing art to cultivate,
Fill Plenty's horn, and better man's estate;
Thine is the wish the Cotter's life to mend,
And teach him that a garden is his friend:
That Virtue smiles—sheds blessings on his head,
And makes him happy in his humble shed,
Who tends his "little patch" in well spent hours,
Amid his kitchen treasures and his flowers;
That Vice ne'er mars a lovely scene like this—
The consummation of the poor man's bliss!
Health, my firm friend, long life and health to thee,
Health to the scions from the parent tree;
Well may thy trophy be a source of pride,
May they preserve it, whatsoe'r betide:
'Tis a memento for imparting good,
More nobly won than that for shedding blood!

AMERICAN STANDARD HORTICULTURAL BOOKS.

The Young Gardener's Assistant, containing Catalogues of Garden and Flower Seed, with Practical Directions under each head for the Cultivation of Culinary Vegetables and Flowers; also, directions for cultivating Fruit Trees, Shrubs, and Vines, including the Fig, the Cranberry, and the Grape Vine. To which is added a Calendar to each part, showing the work necessary to be done in the various departments of Gardening each month of the year. The whole adapted to the climate of the United States. The tenth edition, improved, 504 pages octavo. By T. BRIDGEMAN, Gardener, Seedsman, and Florist: New-York.

✂ As each part of the above Work makes a complete volume, the Ninth Edition has been published in three separate books, with a view to accommodate the different description of cultivators. They are entitled as follows :—

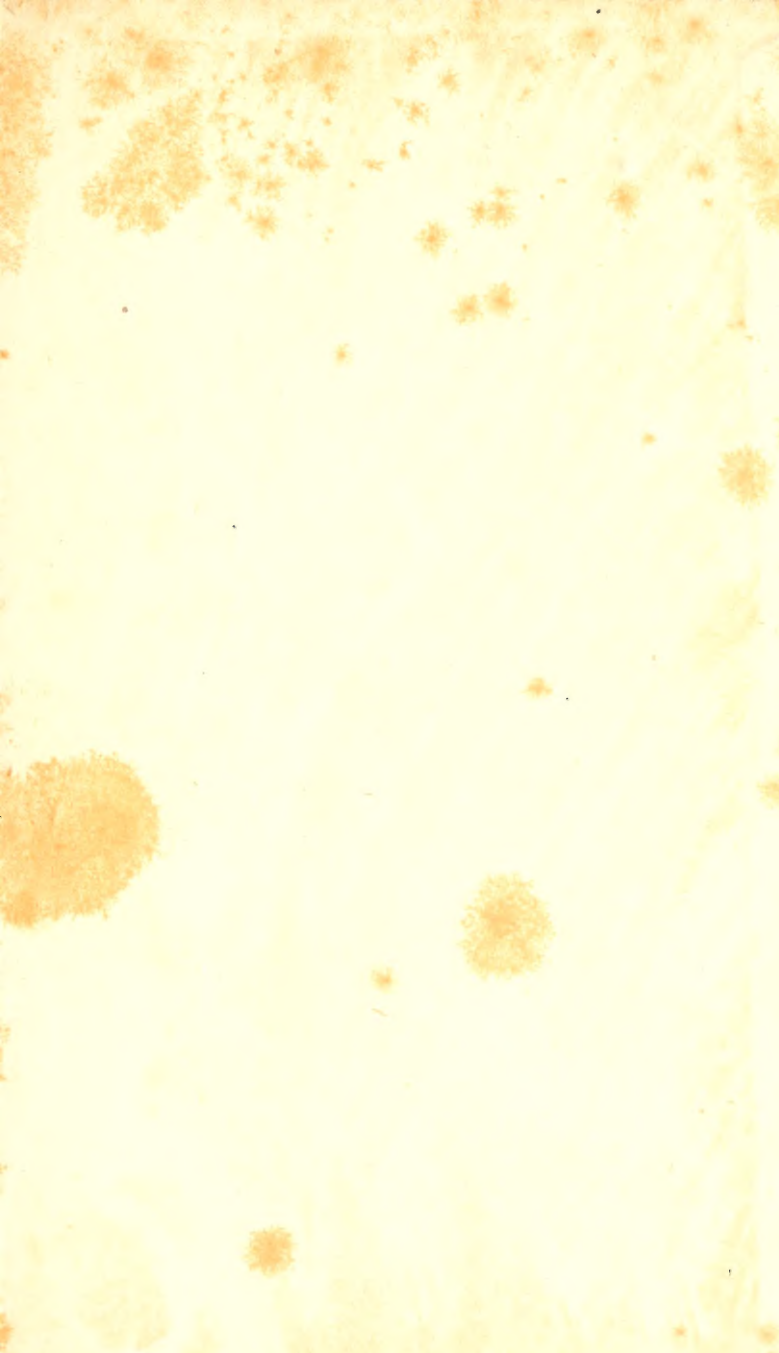
The Kitchen Gardener's Instructor; which contains ample directions for the cultivation of Culinary Vegetables and Herbs throughout the ordinary season; and instructions for Forcing and Forwarding Vegetables in winter and early in the spring.

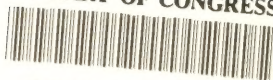
The Florist's Guide, contains all the necessary information for managing a Flower Garden, and for cultivating Exotic Plants, either in a Greenhouse, or warm room.

The Fruit Cultivator's Manual, is designed to qualify the novice in Fruit Culture for the superintendence of his own Orchard and Fruit Garden.

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